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Death of Edward, 5th and his Brother.

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Time's Telescope,

FOR

1832;

OR, A

COMPLETE GUIDE TO THE ALMANACK:

CONTAINING AN EXPLANATION OF

Saints' Days and Holidays;

WITH

EXISTING AND OBSOLETE RITES AND CUSTOMS,

SKETCHES OF CONTEMPORARY BIOGRAPHY,

&c. &c.

ASTRONOMICAL OCCURRENCES

IN EVERY MONTH;

COMPRISING REMARKS ON THE PHENOMENA OF THE CELESTIAL BODIES.

NOTES OF A NATURALIST,

EXPLAINING VARIOUS

APPEARANCES IN THE ANIMAL AND VEGETABLE KINGDOM, ETC.

NEW-YORK

LONDON:
SHERWOOD, GILBERT, & PIPER,
PATERNOSTER ROW.

MDCCCXXXII.

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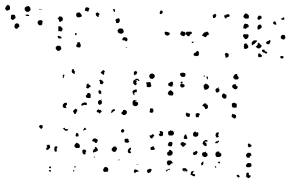

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PREFACE.

After enjoying an undiminished popularity during eighteen years, we enter into our nineteenth with some confidence, that our endeavours to keep pace with the rising spirit of the age, will be found deserving a continuance of public favour.

The first portion of the present volume contains the Remarkable Days, in which is given brief notices of all the Saints' Days in the Calendar; Sketches of the most prominent Characters who have died during the last twelve months; and a variety of other amusing and instructive information.

The second division, containing the Astronomical Occurrences, occupy a larger space than usual, in consequence of the length of the treatise on Cometary Astronomy, which at this period must possess great interest from the expected appearance of two remarkable Comets in the course of the year. The illustrations also, it is

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anticipated, will afford considerable gratification: —if those of the Comets, Double Stars, and Nebula in the Sword-handle of Orion, be held two or three feet from the eye, or be examined at a distance with a telescope of low power, a correct idea will be conveyed of the appearances of these objects, as seen in the heavens with powerful instruments. The whole of this division is from the able pen of Mr. J. T. Barker, whose papers in this work for the two last years have been so highly commended by the scientific world.

Notes of a Naturalist; forming the concluding portion of the volume, are from the pen of J. Rennie, M.A., the distinguished Professor of Zoology, in King's College, London, and author of numerous works of acknowledged merit. Natural History, at all times, possesses a never-ending interest, and, in the present instance, we doubt not that the reader will find much novelty and attraction.

The embellishments, it will be seen, are far more numerous and splendid than have hitherto been bestowed on any previous volume; and, altogether, we flatter ourselves that our zeal and diligence have not been bestowed in vain.

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ROSCOE

REMARKABLE

Days.

Yet point thy Telescope, and still unfold
New forms, rare objects to the gazer's sight.

Balfour.

ABERNETHY

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JANUARY.

Thou art not, January, cheerless, dull,
Unprofitable, cold!—but rightly view'd,
Thou'rt quicken'd with a genial warmth, and full
Of moral fruits, in all directions strew'd,
For those who trudging through thy frost and snow,
Wish to pick pleasant wisdom as they go.

Horace Smith.

THIS month received its name from Janus, the first heathen king of the Romans, who was deified after his death. He was thought to preside over all new undertakings; therefore on this day a beginning was made of every intended work; the consuls elect took possession of their office, and, with the flamines, offered sacrifices and prayers for the prosperity of the empire: all animosities were suspended, and friends gave and received Strenæ, or new year's gifts. Janus was represented with two faces, either to denote his prudence, or, more probably, to indicate that he viewed at once the past and approaching years.

1. CIRCUMCISION.—NEW YEAR'S DAY.

This day commemorates the festival of the Circumcision of our Saviour on the eighth day of his birth. It

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is also New Year's Day, when we may say with the poet—

"The King of light, father of aged Time,
Hath brought about that day which is the prime
To the slow gliding month, when every eye
Wears symptoms of a sober jollity;
And every hand is ready to present
Some service in a real compliment."

At this season gifts and gratulations pass freely between relatives and friends; and many sports and pastimes are still observed. A pleasing picture of some of these customs is given in the following, from the lively pen of Mr. Stringer:

Ah! what sound is that? 'Tis a merry one! What a lively welcome those bells are pealing forth to the infant year! whilst I am sitting alone in "musing melancholy." Why, then, am I here alone? Oh! I will not think of myself, but of those who are where I should have been. I wonder whether they have observed the good old custom of making a "well-spiced" wassail-bowl. I think they must, at all events they ought to, have done so. If they have, it will, ere this, have been once emptied, and is, perhaps, at this moment being replenished. They filled it first on the departure of the old year, and they are now filling it a second time on the entrance of the new one. May they prove as happy, as they are earnest, in the healths they have been and are drinking round the glowing Christmas block! I fear, however, that they will not have the noble boar's head, with its "garlands and rosemary," on their midnight board; but that is not of much consequence, (though I should like to hear it was there,) as they will certainly have plenty of "turkeys with the chine"—

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"crammed capons"—and "fat hens with dumpling legs" —for

"Without their help, who can good Christmas keep?"

If, too, no simple yule cakes have been prepared for the feast, there will be no lack in it of the more eatable "consecrated" mince-pie, and no longer "heretical" plum-porridge. I fancy I see the maidens and youths of the party playfully exchanging the oranges and lemons stuck with cloves, those pretty little memorials of the more *substantial*, but, as testimonies of continued or renewed friendship and affection, not more *valuable*, presents, which *used* to be made on these joyful occasions. And I fancy I hear the jovial songs and lively jokes that are "setting the table in a roar;" for

"'Tis mirth, not dishes, sets a table off."

But, perhaps, by this time that table is cleared, the wassail-bowl again dry, each turkey, capon, and fat hen, devoured; every mince-pie and mess of plum-porridge finished, and the basket of oranges and lemons exhausted. Well! there are the "merry disports" yet to be gone through—yes! though the Lord of Misrule is absent, the Hobby-horse neglected, and the Mummers not to be found, yet has the master of that happy hospitable mansion still his "harp in hall." Listen! Already are its quivering strings pouring out their jocund notes. Every part of the evergreen-covered room is full of life and animation; in the middle, many a couple are floating or dodging through some dance or reel: in one corner the tiny slipper is being hunted by some younger branches of the company, and, from the screams and laughter in another, you may tell that some, a little

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older, are there enjoying all the "hair-breadth scapes," and teasing tricks of blindman's-buff.

> "Young men and maidens now
> At Blindman's-Buff, or Hunt-the-Slipper, play,
> Replete with glee. Some, haply, cards adopt;
> Or, if to forfeits they the sport confine,
> The happy folk adjacent to the fire
> Their stations take."

But, alas! "the best friends must part." The entrance of

> "Froze January, leader of the year,"

has been duly and fully celebrated—he has received all honour, and been received with every festivity. See now with what pretended unwillingness those giggling girls are drawn towards the door through which they must make their *exit*, and over which hangs the "sacred" misletoe, threatening a kiss for each individual berry it bears. Observe what a hearty smack the young men give the lips of their sisters and cousins, and other female relations, and how gallantly and genteelly they salute their more distant, yet *now* more welcome, acquaintances of the softer sex.

Ah! that sound again! Are those chimes ringing a second cheerful round? No, no; 'tis "the waits:" how beautifully this solemn silence sets off their instruments! "Play on," my good fellows!

> "If music be the food of love, play on,
> Give me excess of it; that, surfeiting,
> The appetite may sicken and so die.—
> That strain again; it had a dying fall;
> Oh, it came o'er my ear like the sweet south,
> That breathes upon a bank of violets,
> Stealing, and giving odour."

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But I suppose you will be coming to me before the next twelve hours are past for your vails, you rogues! Well, well; you shall have them. "I love music—I must love it for ever—it is the language of recollection."

"The man that hath not music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils;
The motions of his spirit are dull as night,
And his affections dark as Erebus:
Let no such man be trusted.—Mark the music!"

By what air is "the dull ear of night" thus "startled?"—"They're a' noddin"——No; *I* am not, though I should be; so farewell, ye minstrels! Believe me, no being under heaven can wish you more sincerely than I do—"a merry Christmas, and a happy new year!"

THE NEW YEAR.

A year—another year—has fled!
Here let me rest awhile,
As they who stand around the dead
And watch the funeral pile.
This year, whose breath has past away,
Once thrilled with life—with hope was gay.

But, close as wave is urged on wave,
Age after age sweeps by;
And this is all the gift we have,
To look around—and die!
'Twere vain to dream we shall not bend,
Where all are hasting to an end.

What this new waking year may rise,
As yet is hid from me;
'Tis well, a veil, which mocks our eyes,
Spreads o'er the days to be;
Such foresight who, on earth, would crave,
Where knowledge is not power to save!

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It may be dark,—a rising storm
To blast with lightning wing
The bliss which cheers—the joys that warm!—
It may be doomed to bring
The wish which I have reared as mine,
A victim to an early shrine!

But—be it fair, or dark—my breast
Its hopes will not forego;—
Hope's rainbow never shines so blest
As on the clouds of woe;
And, seen with her phosphoric light,
Even afflictions waves look bright!

But I must steer my bark of life
Towards a deathless land:
Nor need it fear the seas of strife,
May it but reach the strand
Where all is peace—and angels come,
To take the outworn wanderer home.

2, 1831. M. NIEBUHR DIED, ÆTAT 53.

This eminent historian died at Bonn in Prussia, and was the son of Carston Niebuhr, the oriental traveller. In 1812 he published, at Berlin, the first portion of his History of Rome; a translation of which appeared in this country in 1827. Mr. Walter, the translator, in his preface, gives the following account of the labours of the author. "This work was founded on a series of lectures delivered by M. Niebuhr. Though he remodelled, to a certain extent, and adopted a more comprehensive title, yet the original texture or mould is at times palpably evident. The style is characterised by excessive brevity and abruptness of transition,—an inordinate imitation (so to call it) of the great Tacitus." The more important characteristics of the work are, however, that it contains, "many new and original views, many profound and ingenious disquisitions, many bold and successful conjectures; boundless erudition, occasional flights of eloquence—an enthusiasm in the cause of liberty, which, though sometimes carried to a considerable

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excess in his condemnation of the Patricians, and the odium he excites against them, springs from the purest source—sympathy with the oppressed. These may well compensate for the scattered blemishes of style, and the clouds and mysticisms engendered by profundity of thought." About a year before his death, a fire consumed some of M. Niebuhr's papers, but not the manuscript prepared for the continuation of his work, which he intended to conclude at the point where Gibbon commences.

In 1816 the King of Prussia appointed M. Niebuhr his Minister at Rome, being anxious to place the historian where he could enjoy every advantage and facility in pursuing his inquiries. In 1821, however, he returned, after having concluded a sort of concordat with the Holy See. He was afterwards made Professor of History in the University of Berlin, and a Free Associate to the University of Bonn. He was also adorned with several orders and decorations, and continued a Counsellor of State until his death.

6. Epiphany, or Twelfth Day.

Epiphany, which means appearance or manifestation, is a festival kept in commemoration of the discovery Jesus Christ made of himself to the three Magi, or wise men who came to adore him. This festival is called by the Greeks the feast of lights, because our Saviour is said to have been baptized on this day; and baptism is by them called illumination.

The custom of eating twelfth-cake and drawing for king or queen, on this day, is common in all parts of Europe.

The Carnival, a public festival in Catholic countries, commences on this day, and is observed with great solemnity, particularly in Italy, where it continues until Shrove Tuesday, or commencement of Lent.

The amusements, as well as splendor of the last

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carnival in Rome, were much contracted in consequence of the unsettled state of the country and the partial attempts at a revolution. A correspondent in the New Monthly Magazine, writing from Rome, says: "Saturday, the 14th of February, was intended as a day of grand display: the windows and balconies were hung with a profusion of bright drapery, and new seats and platforms were erected; confectionery of all colors was piled up in immense reservoirs, preparing for the contest of comfits, and the whole long street, for more than a mile, with all the piazzas, was filled with scarlet velvet and blue and white confectionery. I had just hired seats for myself and a friend, in a balcony, and was returning home to prepare for the festivity, when I saw bill-stickers, with great trepidation and haste, posting up proclamations in all directions. The first was, that every well-regulated government required that they should be acquainted with all persons resident in their cities; that therefore, all strangers in Rome were required immediately to repair to the Police, to state their name, condition, and country, and the cause which induced them to come to, and remain in the capital. This was followed, in an hour after by another, stating, that as some evil-intentioned persons threatened to disturb the peace of the city, the troops of the line were not deemed sufficient for its protection; and it was therefore required, that every parish should immediately furnish one hundred armed men, to repair to their posts, to defend their properties and families. It was now four o'clock, when the amusements of the Corso commence; and notwithstanding the aspect of things, every one was repairing thither to enjoy the sport, when

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another proclamation appeared, declaring, that grave circumstances required that the carnival should immediately cease, the horse-racing be suspended, the theatres closed, and that no person should, under any pretext whatever, appear in the streets in a masque; that whoever did so, should be immediately arrested, and punished with the utmost rigour of the law."

The cause of these precautions and cessation of the amusements were in consequence of the Government receiving information of the rapid progress of the revolution in the Tramontane provinces, and that those of the Campagna only waited for the signal from Rome, which was to have been attempted on that day: the disaffected mixing with the crowd, with arms under their cloaks, on a given signal, were to commence the revolt. The timely precaution of the government, however, prevented the scheme.

The revolution was subsequently quelled through the intervention of Austria, but not until after several slight engagements, and the Pope acceding to a portion of the demands of the people.

8. St. Lucian.

Some doubt exists as to the identity of the first saint in the calendar, there being two of that name. Alban Butler believes it to be the one who came from Rome to preach in Gaul, where he suffered martyrdom about the year 290. Others affirm him to be the one who was born at Samosata in Syria, who, giving all his property to the poor, devoted himself to the study of the Scriptures. He suffered martyrdom for the profession of his faith, by order of Maximinus II. in the year 312.

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8. First Sunday after Epiphany.

SABBATH MORNING.

BY ALLAN CUNNINGHAM.

Dear is the hallow'd morn to me,
When village bells awake the day;
And, by their sacred minstrelsy,
Call me from earthly cares away.

And dear to me the winged hour,
Spent in thy hallow'd courts, O Lord!
To feel devotion's soothing power,
And catch the manna of thy word.

And dear to me the loud Amen,
Which echoes through the blest abode,
Which swells and sinks, and swells again,
Dies on the walls, but lives to God.

And dear the rustic harmony,
Sung with the pomp of village art;
That holy, heavenly melody,
The music of a thankful heart.

In secret I have often pray'd,
And still the anxious tear would fall;
But on thy sacred altar laid,
The fire descends, and dries them all.

Oft when the world, with iron hands,
Has bound me in its six-days' chain,
This bursts them, like the strong man's bands,
And lets my spirit loose again.

Then dear to me the Sabbath morn;
The village bells, the shepherd's voice;
These oft have found my heart forlorn,
And always bid that heart rejoice.

Go, man of pleasure, strike the lyre,
Of broken Sabbaths sing the charms;
Our's be the prophet's car of fire,
That bears us to a father's arms.

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9. Plough Monday.

Dr. Pegge, speaking of Derbyshire customs, says:—"Plough Monday, the Monday after Twelfth Day, is when the labour of the plough and the other rustic toils begin. On this day the young men yoke themselves, and draw a plough about, with music; and one or two persons, in antic dresses, like jack-puddings, go from house to house, to gather money to drink; if you refuse them they plough up your dunghill. We call them here the plough bullocks." Similar customs, with some variations, are observed in various parts of the country on this day.

The custom of opening the New Year with agricultural ceremonies, in which the plough was a chief agent, is of an extremely remote origin. The Chinese, the Persians, and the Greeks, observed them at the earliest periods to which their history has been traced; and in general they appear to have been connected with the sacred mysteries of religion. Sheridan, in his edition of Persius, mentions the "*Competalia*" of the ancients, which "were feasts instituted, some say, by Tarquinius Priscus, in the month of January, and celebrated by servants alone when their ploughing was over." Plutarch informs us that the Athenians were accustomed to celebrate "three sacred ploughings." Du Cange, in his *Glossary*, has a reference to some old laws which mention "the drawing a plough about;" and in a curious tract, printed by Pynson, in 1493, with the title *A Compendiouse Treetise Dyalogue of Dives and Pauper*, among the superstitions censured at the beginning of the year, is that of "Ledyng the ploughe aboute the fire, as for gode begynnyng of the yere that

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they shoolde fare the better alle the yere followyng." It would seem also to have been once customary to perfume the ploughs with incense; for the learned Bale, in his very rare book intituled, *Yet a Course at the Romyshe Foxe*, printed at Zurick in 1542, mentioning the "auncyent rytes and laudable ceremonyes of Holy Churche," can only allude to this where he says, "then ought my lorde," meaning Bishop Bonner, "to suffre the same selfe ponnyshment for not sensing the plowhess upon Plowgh Mondaye."

14, 1831. HENRY MACKENZIE DIED, ÆTAT 80.

This popular author, the son of Dr. Joshua Mackenzie, an eminent physician of Edinburgh, was born in August, 1745. Having received a liberal education, he devoted himself to the study of law, and in 1766 became an attorney in the Scottish Court of Exchequer.

His first literary attempt was *The Prince of Tunis*, a tragedy, performed with success at Edinburgh in 1763. In 1771 *The Man of Feeling* appeared anonymously, and became, at once, so extremely popular, that a Mr. Eccles, a young Irish clergyman, laid claim to the authorship, and supported it by a copy transcribed with his own hand, with blottings, interlineations, and corrections; and such was the plausible pertinacity with which he maintained his perpetual right, that Mr. Mackenzie's publishers found it necessary to publicly contradict Mr. Eccles' claim.

His next work was *The Pursuit of Happiness*, a poem; which was succeeded a few years afterwards by *The Man of the World*, intended as a sequel, or second part of *The Man of Feeling*. The hero, in the latter, is constantly obeying every emotion of his moral sense: in the former he rushes headlong into ruin, and spreads misery around him, by pursuing a happiness which he expected to obtain in defiance of the suggestions of the inward monitor.

His next production was *Julia de Roubigne*, which Sir Walter Scott says, "perhaps gives the reader too much actual pain to

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be so generally popular as *The Man of Feeling*, since we have found its superiority to that beautiful essay on human sensibility often disputed by those whose taste we are in general inclined to defer to. The very acute feelings which the work usually excites among the readers, whose sympathies are liable to be awakened by scenes of fictitious distress, we are disposed to ascribe to the extreme accuracy and truth of the sentiments, as well as the beautiful manner in which they are expressed. There are few who have not had, at one period of life, disappointments of the heart to mourn over; and we know no book which recalls the recollection of such more severely than *Julia de Roubigne.*"

In 1777-8, a society of gentlemen met together, occasionally, in Edinburgh, for the purpose of reading short essays of their own composition. Mr. Mackenzie being a member, suggested the idea of publishing a periodical paper after the manner of the "Spectator," which being acceeded to, *The Mirror* made its appearance: Mr. Mackenzie being the editor and principal contributor. The success of this led to *The Lounger*, conducted on the same plan, and which continued until the year 1787. In the latter Mr. Mackenzie paid the first tribute to the genius of Burns, by a review of his poems then first published. This at once brought the unknown poet into notice, and drew him from obscurity into the full blaze of a fame that will never die.

Mr. Mackenzie enriched the Transactions of the Royal Society of Edinburgh, and the Highland Society, with several valuable communications. He also wrote several tragedies and comedies which were published in an edition of his works in 1808.

During the greater part of his life he enjoyed the situation of Comptroller of the Taxes for Scotland. In conversation he was full of the wit and playfulness that distinguish his essays; and he was wont to delight his friends with recollections of his earlier years, which were full of interest and amusement. It was no trivial praise when Sir Walter Scott, in dedicating *Waverley* to him, styled him the SCOTTISH ADDISON.

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18. St. Prisca.

A Roman virgin put to death by order of the Emperor Claudius, in the year 275, for refusing to abjure Christianity and offer sacrifice when commanded.

19, 1831. Nathaniel Gow died.

This celebrated Scottish violinist, and composer of many popular airs, died at Edinburgh. He received a pension, in his latter days, from George the Fourth, who treated him with marks of royal condescension, on observing him at the head of his band in Dalkeith House in 1822.

20. St. Fabian.

A native of Italy, who succeeded St. Anteros in the Papal chair in the year 236. He suffered martyrdom under the persecution of the Emperor Decius in the year 250.

21. St. Agnes,

A beautiful Roman virgin, who suffered martyrdom at the age of thirteen, in the year 304, for embracing the doctrines of Christianity. Forster says:—"There is an evident connexion between the name of *Agnes* and the Latin word *Agnus;* and in corroboration thereof, it may be mentioned, that on the legendary account of St. Agnes appearing to her parents in a vision after her death with a lamb by her side, the figures which painters have drawn of her are usually accompanied by a lamb." In the church built on the place of her martyrdom, the priest of the church of St. Peter's ad Vincula annually blesses two lambs, whose wool is afterwards made use of by the nuns of St. Lawrence to make palliasses.

Agnes's Eve was formerly a night of great importance to young maidens, desiring to know who should be their husbands: it was required of such persons that they should not eat on this day, and those who conform

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to the rules, call it fasting on St. Agnes's Fast. There is a receipt, or charm, whereby a lad or a lass is to obtain a sight of the fortunate lover, provided that before the mystic ceremony begins, they preserve silence till the clock has struck the hour of twelve, and it runs thus:—"On St. Agnes's night, take a row of pins, and pull out every one, one after the other, saying a paternoster, sticking a pin in your sleeve, and you will dream of him or her you shall *marry*."

There is another ceremony performed on this same St. Agnes's night, which more generally prevails, and is more generally practised in the northern parts of Scotland than the former one; but this is only adopted by the mountain peasantry, and in which it is well known that they place the most implicit faith, and you cannot offend them so highly as to discredit its authority.

This ceremony consists of a number of young lads and lasses meeting together on the eve of St. Agnes, and at the hour of twelve, one by one, go to a certain corn-field and throw in some grain, after which they pronounce—

"Agnes sweet, and Agnes fair,
Hither, hither, now repair;
Bonny Agnes, let me see
The lad who is to marry me."

The prayer is granted by their favorite saint, and the shadow of the destined bride or bridegroom is seen in a mirror on this very night; and from this period the young couple date their happiness or misery, what was only fancy actually soon after being made reality.

22. St. Vincent.

A native of Spain, who suffered martyrdom in that country during the Dioclesian persecution in the year 304.

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22, 1788. LORD BYRON BORN.

NEWSTEAD ABBEY,

THE ANCIENT RESIDENCE OF THE BYRON FAMILY.

Hail, holy maids! who haunted once the steep,
That hangs o'er Delphi's old prophetic fane;
Hail, holy maids! who still your influence keep,
Still claim the poet's vows, and bless his strain:
Pass'd of all others is the fabled reign,
Which faith and genius once had made divine;
The cavern breathes its omens all in vain,
No suppliants bow, no votive altars shine,
No trembling priestess chants, nor Gods protect the shrine.

The wandering Dryad has forgot her bower,
The Naiads all have left the lonely spring,
Fair Dian sports not at her twilight hour,
The bird of Venus plumes no more her wing.
No more Apollo strikes the heavenly string,
Mars' fiery helm, Saturnia's angry frown,
E'en Jove's dread thunders now no terror bring;
All, save in ancient story, are unknown—
But yet, as then, YE reign—yet worshipped, though alone.

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Hail, holy maids! in many a ruder clime,
Than that of fairy Greece, ye linger still;
Still proudly triumph o'er the spell of time,
O'er war, o'er glory, gained from human ill;
And they, who once fame's loudest blast could fill,
Less than the humblest votary of your smile,
Now in some narrow grave forgotten dwell—
But HE, the gathering wrinkle can beguile
From Time's old brow, and seize immortal youth the while.

Are not these turrets symbols of your power?
For whom the pomp of that sepulchral cell?—
Warriors, and priests, and sages,—that their hour,
Their passing hour, have filled, and filled it well;
Warriors, who tamed the proud, the infidel;
Priests, who have led the erring soul to God;
Sages admired—yea loved; long tablets tell
Their fame, and gaudy scutcheons their abode—
Yet who for thought of them, these halls and aisles hath trod.

No! no! they do not give these towers their charms,
'Tis not for them, that wandering strangers come,
That genius lingers, beauty's bosom warms—
They warm, they linger, o'er a poet's tomb.
Yes! holy maids! that poet's hallow'd doom—
Hallow'd, if generous virtues may atone
For human frailty—shall your lamp relume,
Your shrine restore, in scenes to fame unknown,
And many a breast, now cold, the potent spell shall own.

G.

23, 1831. GEORGE BLOOMFIELD DIED, ÆTAT. 73.

The elder brother of Robert Bloomfield, who at one period held much correspondence with the distinguished patrons of his brother. He was a ladies' shoemaker, and lived in an obscure court, near Coleman-street, London, working with four others in a garret, when Robert, at the age of fifteen, was consigned to his care by their mother, who charged him as "he valued a mother's blessing, to watch over him, to set good

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examples for him, and never to forget that he had lost his father." George Bloomfield died at Bury St. Edmund's, where he had lived many years on the dependence of a few kind and humane friends.

25. Conversion of St. Paul.

This festival was instituted very early. Pope Innocent III. commanded it to be kept with great solemnity; and it is mentioned as a solemn festival in the Council of Oxford held in the reign of Henry III. in the year 1222.

Of the event which this day commemorates, the following account is given in the *History of the Life and Opinions of the apostle Paul*:—"The miracle afforded for the conviction of Paul, arrested him on a journey from Jerusalem to Damascus, (the capital of Syria, about an hundred miles north of the former city,) when he meditated destruction to the disciples of Christ in that place. For this cruel purpose, he was clothed with authority by the chief priests; and it must be confessed, that they could not have chosen one more ready to execute the commission. He seems to have held the name of Jesus in abhorrence—for he considered him an enemy to Moses, an impious impostor, and a leader of ignorant levellers. Alas! what mistakes, what absurdities, what crimes, have been produced by prejudice! But Jesus knew his sincerity, and had compassion on his ignorance. An extraordinary light from Heaven shone upon the deluded persecutor; and the voice of Jesus addressed him in accents both of remonstrance and mercy; and interrogated, why it was that he opposed his cause? As might be supposed, this supernatural event astonished and subdued the zealous youth. He

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desired instruction and direction. The miracle convinced him that Jesus was the Messiah, and that he had been opposing the messenger of the God of Israel, whom he worshipped, and acknowledged as the only true God. To this heavenly call, he says he was not disobedient. Nor did he confer with flesh and blood. On this occasion he was deprived of his sight for several days, and continued fasting and praying during the same time. But there were already many disciples of Jesus at Damascus, and one of them was specially directed to visit Paul in his perplexity, to restore him to sight, and to give him instruction, suited to his present condition. As soon as he was restored to his usual health, and to his sight, he associated with the Christians residing there, who received him with great joy, though with some hesitation at first, until assured of his sincerity. The unbelieving Jews were astonished and confounded by this event, and it was the topic of conversation among all classes of the people."

26, 1831. RICHARD PAUL JODRELL DIED, ÆTAT. 85.

Mr. Jodrell was born on the 13th of November, 1745, and received his education at Eton, and at Hertford College, Oxford. His attachment to classical studies was evinced by his various publications. He contributed largely to the Supplementary Notes of Potter's Æschylus, printed in 1778; in 1781 he published, in two volumes, *Illustrations of Euripides on the Ion and Bacchæ;* and in 1790, another volume, *On the Alcestis.*

Mr. Jodrell also wrote several dramatic pieces, none of which, however, attained much popularity. In 1784 he became a member of the Club held at the Essex Head, for the purpose of cheering the declining days of Dr. Johnson, and it is believed that he and Mr. Clark, who died a few days before him, were the last survivors of that celebrated literary frater-

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nity. In 1772 he was elected a fellow of the Royal Society; n 1784 of the Society of Antiquaries; and 1793 was created D. C. L. at Oxford. For a short period he sat in parliament for the borough of Seaford

With advancing years the mind of Mr. Jodrell had become obscured, and from the ar 1822 he gradually sunk, until he reached total and absolute ncapacity. It became necessary, from attempts made on his impaired understanding, to throw legal protection over his person and property, which was effected, after the proper investigation, before a commission *de lunatico inquisrendo*. In this unfortunate state he remained during the remainder of his life.

27, 1773. DUKE OF SUSSEX BORN.

30, 1649. KING CHARLES I. MARTYR.

His martyrdom was a civil and political one. He need not have ascended the scaffold would he have betrayed the liberties and plundered the wealth of the nation. The King alluded to this extraordinary fact on his trial. Once turning himself to Bradshaw, and fixing his eyes on some persons near him, Charles said, "There are some sitting here that well know that if I would have forfeited or betrayed the liberties and rights of the people, I need not have come hither."—*D'Israeli's Commentaries on Charles I.*

In the same work is given an affecting picture of the sufferings of the King in his latter days.—"The military life of Charles the First exhibited a singular series of personal exertions, often in a state of miserable deprivation, hardly to be paralleled in the history of any other monarch or man. His painful marches, and his fugitive life, were a tribulation of nearly four laborious and afflicted years—and his two last was past in the awful repose of his imprisonment. A curious record, kept by

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one who had been his daily attendant, has the following entries:—'The King and his party sometimes lodged in a bishop's palace, or at the seat of a lord, or a country gentleman, and at a merchant's abode, but not unusually at a yeoman's house,' and 'a very poor man's house.'—'Dinner in the field,' is a very usual entry, but the melancholy one of 'no dinner this day' is repeated for successive days. 'Sunday no dinner, supper at Worcester, a cruel day.' 'This march lasted from six in the morning till midnight, a long march over the mountains.' 'His Majesty lay in the field all night, in his coach, on Bonnock Down.' 'The King had his meat and drink dressed at a poor widow's.'"

The accompanying vignette represents *Shaw House*, near Newbury in Berkshire, the head quarters of Charles after the battle of Newbury. A hole in the wainscot of a window in the library is still carefully preserved; tradition asserting that it was made by a shot that narrowly missed the King whilst dressing. A basket of shot is likewise kept, that was gathered about the premises at the time.

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FEBRUARY.

"Hail! then, February! month and mother of Love!"
Mirror of the Months.

THE second month of the year derived its name either from the God Februs, or from Februs, a name of Juno, in whose honor a feast of atonement was held by the ancient Romans for twelve days in this month.

2. PURIFICATION OF THE BLESSED VIRGIN MARY, OR, CANDLEMAS DAY.

The festival in commemoration of the Purification is also called Candlemas Day, from the ancient Romish custom of lighting up the churches and chapels on this day with candles and lamps.

ON SEEING A PICTURE OF THE VIRGIN MARY.

PAINTED SEVERAL CENTURIES SINCE.

A FRAGMENT, BY L. MARIA DAVIDSON, WRITTEN IN HER FIFTEENTH YEAR.

Roll back, thou tide of time and tell
Of book, of rosary, and bell;
Of cloistered nun with brow of gloom,
Immured within her living tomb;
Of monks, of saints, and vesper song,
Borne gently by the breeze along;

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Of deep-toned organ's pealing swell;
Of ave-marie, and funeral knell;
Of midnight taper, dim and small,
Just glimmering through the high arched hall;
Of gloomy cell, of penance lone,
Which can for darkest deeds atone;
Roll back, and lift the veil of night,
For I would view the anchorite.
Yes, there he sits, so sad, so pale,
Shuddering at Superstition's tale;
Crossing his breast with meagre hand,
While saints and priests, a motley band,
Arrayed before him, urge their claim
To heal in the Redeemer's name;
To mount the saintly ladder, (made
By every monk, of every grade,
From portly abbot, fat and fair,
To yon lean starveling, shivering there,)
And mounting thus, to usher in
The soul, thus ransomed from its sin.
And tell me, hapless bigot, why,
For what, for whom did Jesus die,
If pyramids of saints must rise
To form a passage to the skies?
And think you man can wipe away
With fast and penance, day by day,
One single sin, too dark to fade,
Before a bleeding Saviour's shade?
O ye of little faith, beware!
For neither shrift, nor saint, nor prayer,
Would ought avail ye without Him,
Beside whom saints themselves grow dim.
Roll back, thou tide of time, and raise
The faded forms of other days!
Yon time-worn picture, darkly grand,
The work of some forgotten hand,
Will teach thee half thy mazy way,
While Fancy's watch-fires dimly play.

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Roll back thou tide of time, and tell
Of secret charm, of holy spell,
Of Superstition's midnight rite,
Of wild Devotion's seraph flight,
Of Melancholy's tearful eye,
Of the sad votaress' frequent sigh
That trembling from her bosom rose,
Divided twixt her Saviour's woes,
And some warm image lingering there,
Which, half repulsed by midnight prayer,
Still, like an outcast child, will creep
Where sweetly it was wont to sleep,
And mingle its unhallowed sigh
With cloister-prayer and rosary;
Then tell the pale, deluded one
Her vows are breath'd to God alone;
Those vows, which tremulously rise,
Love's last, love's sweetest sacrifice.

2, 1831. JAMES CHRISTIE DIED, ÆTAT. 58.

An eminent auctioneer, and a gentleman of distinguished classical attainments. He was the author of *An Essay on the Ancient Greek Game supposed to have been invented by Palamedes, antecedent to the Siege of Troy; A Disquisition upon Etruscan Vases;* and an *Essay on the Earliest Species of Idolatry, the Worship of the Elements.* He was a member of the Dilletanti Society; of the Antiquarian Society of Newcastle; and one of the Registrars of the Literary Fund.

3. ST. BLAISE.

He was Bishop of Sebaste in Armenia, and suffered martyrdom in the persecution of Licinius about the year 319. The wool-combers consider him their patron saint, and keep this day as a holyday in many parts of England.

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3, 1831. THOMAS HOPE, F.R.S. & F.S.A. DIED.

The distinguished author of *Anastasius* was descended from a wealthy mercantile family, and being possessed of an ample fortune, travelled over various parts of Europe, Asia, and Africa, in early life. Being an able draughtsman, he returned with a large collection of sketches, principally of architecture and sculpture. On his return to England he purchased a large mansion in Duchess Street, Portland Place, the whole interior of which he had finished, fitted up, and furnished, from his own designs. The drawings from which his furniture was made he afterwards published in a folio volume, which led to a complete revolution in the upholstery and interior decoration of houses. Mr. Britton says: "To Mr. Hope we are indebted, in an eminent degree, for the classical and appropriate style which now generally characterize our furniture and ornamental utensils." "In forming my collection," says Mr. Hope, "and in fitting up my houses, my object has neither been an idle parade of *virtu*, nor an ostentatious display of finery. I have observed with regret, that most persons employed in our manufactures, or in furnishing our habitations, are rarely initiated even in the simplest rudiments of design, whence it has happened that immense expense has been employed in producing furniture without character, beauty, or appropriate meaning."

In 1809 Mr. Hope published *The Costume of the Ancients*, in two volumes, and three years afterwards, *Designs of Modern Costume*. These works evinced a profound research into the works of antiquity, as well as a familiarity with all that is graceful and elegant: and tended very materially to improve female costume. His most popular production, however, is *Anastasius; or Memoirs of a Modern Greek*, which, in the form of a romance, conveys so accurate a picture of the customs, manners, and countries, of the Turks and Greeks, that when a gentleman, of high diplomatic station and abilities, was advised to publish an account of his travels among those people, he replied that Mr. Hope had already given such an accurate and graphic description of them in *Anastasius*, that there would be nothing new for him to relate.

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At the period of his decease, Mr. Hope was engaged in printing a work, *On the Origin and Prospects of Man*, which has since appeared. It is a most extraordinary work, and would alone have handed down its author to posterity. It treats in a perfectly new and original manner of the metaphysical abstractions least examinable by human sense or reason:—of eternity, time, space, matter, force, movement, mind, soul, God. The views of the creation of the world; of the origin of man, literally from the dust of the earth (or a congregation of entities); of evil being deduced from good arrived at a certain point, as death follows life; of the progress of the inorganic and organic world; of vitality; of society in all its advanced and civilized relations; and of the future. The whole presenting a new system of philosophy, enforcing the advantages of virtue and righteousness in our present state, and offering a bright hope of the blissful enjoyment of soul in the world to come.

Mr. Hope was in all respects a munificent patron of art and of artists; and even of the humbler mechanic; for he has been known to traverse obscure alleys, lanes, and courts, to find out and employ men of skill and talent in their respective pursuits. Thorwaldsen, the celebrated Danish sculptor, was chiefly indebted to him for the early support and patronage which he experienced. Flaxman was extensively employed by him; and he enjoyed the satisfaction of having excited the genius and fostered the talents of Chantrey. He left an extensive collection of drawings and engravings, illustrative of buildings and scenery in Greece, Turkey, Italy, France, and Germany; as well as of antique sculpture, vases, &c., which it is hoped may yet be given to the world.

5. St. Agatha.

A virgin martyr, who suffered by order of Quintianus in the year 251. She was born in Sicily, but whether at Palermo or Catana is uncertain, both claiming the honour.

6, 1831. Rodolph Kreutzer died, ætat. 63.

This eminent violinist and composer, the son of a musician

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in the band of the King of France, was born at Versailles in 1767. At the age of thirteen he played at the Concert Spirituel, a concerto of his master's (Stamitz) composition with great success. At nineteen he had composed two grand operas, which were performed before the whole court. At the period of the Revolution, he travelled in Germany, Holland, and Italy, and established his fame as the first violinist in Europe. He subsequently returned to France at the invitation of Napoleon, where he received the appointment of first violin player to the Emperor, chef d'Orchestre at the opera, and professor of the violin at the Conservatiore. The two last appointments he continued to hold until by an accident he became deprived of the use of his arm in 1817.

The Emperor used to say that time was too precious to listen to instrumental music, excepting when Kreutzer was playing a concerto on the violin. He conferred on him the gold cross of the Legion of Honour, and often conversed with him in a familiar manner. As a composer Kreutzer also greatly distinguished himself. Besides an immense number of instrumental pieces, he wrote several operas, among which are, Lodoiska, Paul and Virginia, The Death of Abel, and Aristippus.

7, 1831. REV. ANDREW THOMSON, D.D. DIED, Minister of St. George's Church, Edinburgh, and long an ornament of the Kirk of Scotland.

He was just returning home from a meeting of presbytery, and having met a friend at the west end of Princes Street, he was giving him an account of the proceedings which had taken place. This gentleman walked along with him to his own door, where, stopping for a moment, as if he wished to say something more, he muttered some words indistinctly, and instantly fell down on the pavement. He was carried into his own house in a state of insensibility, and on opening a vein, only a few ounces of blood flowed, and he expired.

Such was the esteem in which Dr. Thomson was held, that about £8000 was raised, by subscription, for the benefit of his family, and a pension of £150 a year for life, granted to his widow by the King.

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Dr. Thomson was greatly distinguished for natural talents, professional eminence, and great influence on society, in matters of a polemical description; and was unquestionably the most energetic, the most intrepid, the most resolute, and the most indefatigable minister of the national church of Scotland. In eloquence he was unmatched; and though the ardency of his zeal as a public disputant often carried him farther than even his friends could justify, yet the bold and manly way in which he invariably kept his ground, and his unaffected good temper and benevolence in private life, secured for him, on all occasions, a degree of suffrage which a less gifted, though more guarded, controversialist could never have obtained. Nature seemed to have intended him rather for the bar than the pulpit—though in any profession he must have risen to eminence, for he never scrupled to grapple with, and frequently defeated, the ablest of forensic orators in their own field.

11, 1763. WILLIAM SHENSTONE DIED, ÆTAT. 50.

The residences of eminent persons have always been objects of interest. The above view of the Leasowes, near Hales Owen, in Shropshire, where the most elegant of pastoral poets, Shenstone was born and died, derives additional interest from the circumstance of its no longer being the quiet and beautiful elysium that it once was: a line of canal having run close to the place, and robbed it of those charms which once attracted numbers from all parts. Shenstone devoted his time and his

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fortune to the adornment of this spot, yet, as Campbell observes—"With all the beauties of the Leasowes in our minds, it may still be regretted, that instead of devoting his whole soul to clumping beeches, and projecting mottos for summer-houses, he had not gone into living nature for subjects, and described her interesting realities with the same fond and *naive* touches, which give so much delightfulness to his portrait of the schoolmistress.

11, 1831. TURKISH TOLERATION ESTABLISHED.

The "march of intellect" must be making rapid strides when the following benevolent Imperial decree is issued in Turkey by the Sultan Mahmoud:—"Greeks, Armenians, Armenian Catholics, and Jews, shall, from henceforth, in common with the Turks and Mussulmen, be equal before the law. No Mussulman shall, in future, have any preference, or enjoy any superior rights in consequence of his being a Mussulman; for, according to the opinion of the Sultan, all form but one family —but one body, whatever may be the private creed of each of his subjects, which is a matter that only concerns the conscience of man, who cannot be called to account for his religion to any one but God. As to the government of the Sultan, it will not, under any circumstances, consider what is the religion of the person who may present himself before it."—*Dated February* 11, 1831.

13, 1831. REAR ADMIRAL SIR EDWARD BERRY, BART., K.C.B., DIED, ÆTAT. 62.

This gallant officer, the son of a London merchant, was born in 1768, and evincing an early predilection for the sea-service, was entered as a midshipman under Lord Mulgrave, on the 5th of February, 1779, being at the time under eleven years of age. His first voyage was to the East Indies in the Beresford,

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of 70 guns, and from that period he was engaged in a continued series of actual service. In the first war of the French Revolution he received a lieutenant's commission for spiritedly boarding a ship of war. In the action off St. Vincent's on the 14th of February, 1797, he greatly distinguished himself by boarding the San Josef, and San Nicolas, being the first man who jumped into the mizen chains of the San Nicolas. For this exploit he was made post-captain.

In the memorable battle of the Nile on the 1st of August, 1798, Captain Berry greatly distinguished himself; as is sufficiently testified in Lord Nelson's dispatches to the Admiralty, in which he says:—"The support and assistance I have received from Captain Berry cannot be sufficiently expressed. I was wounded in the head, and obliged to be carried off the deck, but the service suffered no loss by that event. Captain Berry was fully equal to the important service then going on." Being charged with the dispatches on this occasion, he was on his way home in the Leander, Captain Thompson, of 50 guns, when the vessel was captured by a French 80-gun ship, and Captain Berry wounded in the arm. Being exchanged, he returned to England, and was knighted on the 12th of December, 1798; at the same period he also received the freedom of the city of London in a gold box.

In the battle of Trafalgar, on the 21st of October, 1805, Sir Edward again distinguished himself as captain of the Agamemnon, of 64 guns. After this engagement he sailed to the West Indies, and participated in Admiral Duckworth's victory off St. Domingo on the 6th of February, 1806. On his return home he received two medals from the King, for his services at Trafalgar and at St. Domingo; and having previously received one for the victory of the Nile, he was the only captain in his Majesty's service who had received the honor of three medals. On the 12th of December, in the same year, he was elevated to the rank of a baronet. He was afterwards appointed a Knight Commander of the Bath, and promoted to the rank first of Rear-Admiral of the White, and then of the Red, squadron.

At the peace of 1814 Sir E. Berry retired to Catton, near

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Norwich, intending to fix his residence there; but after some years, his health declining, he removed to Bath, where he finally closed his active and serviceable life.

14. St. Valentine,

A presbyter of the Romish church, who was beheaded during the persecution of Claudius II. in the year 270.

The annual custom of sending "valentines" on this day is of very ancient practice; although its origin is buried in obscurity. Lydgate, the monk of Bury, who lived at the close of the fourteenth century, establishes the custom to have been then prevalent, by his mention of it in a poem to the Queen of Henry V. Chaucer also says:

> Nature the vicare of the Almightie Lord,
> That hote, cold, heire, light, moist, and drie
> Hath knit by even number of accord,
> In easie voice, begun to speak and say,
> Foules, take hede of my sentence I pray,
> And for your own ease in fodring of your need,
> As fast as I may speak I will me speed.
> Ye know well, how on St. Valentine's day,
> By my statute and through my governaunce,
> Ye doe choose your mates, and after flie away
> With hem as I pricke you with pleasaunce.

Herrick also, in his *Hesperides*, says:—

> Oft have I heard both youth and virgin say,
> Birds chuse their mates, and couple too this day:
> But by their flight I never can divine,
> When I shall couple with my Valentine.

Misson, in his *Travels in England*, written more than a century since, says: "On the eve of St. Valentine's Day, a time when all living nature inclines to couple, the young folks in England and Scotland too, by a very

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ancient custom, celebrate a little festival that tends to the same end. An equal number of maids and bachelors get together; each writes their true or some feigned name upon separate billets, which they roll up and draw by lots, the maids taking the men's billets, and the men the maids."

Another kind of Valentine is the first young man or woman that chance throws in your way on that day. This custom is thus alluded to by the poet Gay:—

"Last Valentine, the day when birds of kind
Their paramours with mutual chirpings find,
I early rose, just at the break of day,
Before the sun had chas'd the stars away;
To field I went amid the morning dew,
To milk my kine (for so should housewives do,)
Thee first I spied, and the first swain we see,
In spite of Fortune, shall our true love be."

19. Septuagesima Sunday.

This always falls on the seventieth day, or tenth week, before Easter Sunday.

A SABBATH HYMN.

Great Source of love! to thee we owe
More praise than our poor lips bestow,
When we approach thy mercy seat
With folded hands and willing feet.

When we thy creatures here below,
In darkness groped, mid pain and woe,
O'er seas of sin and sorrow borne,
Our bark by storm and tempest torn.

Thy pity and thy love were shown
In sending us thine only Son,
To guide our wandering course aright,
From darkness gross to gospel light.

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Our bark by tempests tost he saves;
His heavenly voice rebukes the waves;
"Forbear your rage," he whispers "peace!"
The sea is calm, the billows cease.

Father of mercies, God of love!
Our sins forgive, our guilt remove;
Then may we, at thy footstool, bring
A pure, accepted offering.

21, 1831. Rev. Robert Hall, A.M. ÆTAT. 68.

This eminent Baptist Minister was the son of the Reverend Robert Hall, Minister of the Particular Baptists at Arnsby, in Leicestershire. He was first educated under the care of the Rev. Dr. Ryland, at Northampton, after which he was sent to the Baptist Academy at Bristol, whence, in 1781, he proceeded to King's College, Aberdeen. After four years residence there he returned to the Academy at Bristol, as an assistant to Dr. Evans, in which situation he continued until 1791, when he succeeded the Rev. Robert Robertson, as Minister at Cambridge. Here he became known to some of the most distinguished scholars of the age, by whom he was much admired. Among these was Dr. Parr, who said, "Mr. Hall, like Bishop Taylor, has the eloquence of an orator, the fancy of a poet, the acuteness of a schoolman, the profoundness of a philosopher, and the piety of a saint." In 1804 he removed from Cambridge to Leicester, where he was Pastor of the meeting in Harvey Lane. Here he remained until 1826, when he was invited to succeed Dr. Ryland, at Bristol; where his earthly labours terminated, and where his remains now lie, in a small burying ground attached to the chapel in Broadmead.

As a writer, we need only quote the words of the celebrated Dugald Stewart, who said:—"There is a living writer who combines the beauties of Johnson, Addison, and Burke, without their imperfections. It is a dissenting minister of Cambridge, the Rev. Robert Hall. Whoever wishes to see the English language in its perfection must read his writings." These have been lately collected by Dr. Gregory, and form six octavo volumes.

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Mr. Hall's first publication was *An Apology for the Freedom of the Press*, a masterly work, written in a style of the purest argumentative eloquence, and fervid with the spirit of freedom. Sometime after, appeared his *Sermon on Modern Infidelity*, indisputably the first work of its kind in the language, adorned with all the graces of finished composition, and displaying the mighty powers of a master of reasoning. His *Sermon on the Death of the Princess Charlotte* is without a rival amongst the numbers delivered on that melancholy occasion; and those who would see noble ideas wedded to noble diction, and the eloquence of thought fitly enshrined amidst all the "glories and beauties of" impassioned language, must peruse his *Sermon on War*, and *Thoughts on the Present Crisis*.

The name of Mr. Hall stood prominent as one of the first pulpit orators of the day; his oratory was not loud, forcible, and overpowering, like some distinguished individuals, whose powers have been compared to the thunder of cataracts, but it was soft, mellifluous, rich, deep, and fluent, as the flowing of a mighty river—to this he added an earnestness and fervency which impressed his audience with the sincerity of his belief. From bad health, and a peculiarly delicate nervous temperament, he hardly ever, of late years at least, studied any of the orations that he delivered, or even thought of them until he entered the pulpit. His addresses were, in consequence, unequal. There was, at times, a heaviness in his discourses, which was apt to make strangers wonder at the reputation for oratory to which he had attained; but when his health was firm, his spirits good, and his theme congenial, no man ever rose to higher and happier flights than he did in these purely extemporaneous exhibitions.

24. St. Matthias,

The apostle chosen to supply the place of the traitor Judas Iscariot. He is supposed to have been murdered by order of Annanias, high priest of the Jews, in the year 62.

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Painted by W. Hamilton, R.A. Engraved by H. R. Cook.

Winter.

THE SABBATH EVENING.

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24, 1774. Duke of Cambridge born.

26. Sexagesima Sunday.

The eighth Sunday before Easter, and second before Lent.

SABBATH EVENING.

A SONNET.—BY J. ROBINS.

Father of light and life, thou God Supreme!
O teach me what is good! teach me Thyself!
Save me from folly, vanity, and vice,
From every low pursuit! and feed my soul
With knowledge, conscious peace, and virtue pure;
Sacred, substantial, never-fading bliss!

Thomson.

I love the quiet of a Sabbath eve,
The closing of a well-spent holy day:
When earthly follies lead men not astray,
Or leave just cause for the poor heart to grieve.
It is a joy none but the righteous know,
A joy dispelling every care and woe,
Causing the purest happiness to flow.

The poorest peasant 'neath the azure sky,
Who spends his sabbath with a holy zeal,
Far greater happiness is sure to feel
Than the rich recreant who God's words defy.
Give me the humble holy fire side,
Where the "big bible's"* read, devoid of pride,
For virtue's there with happiness allied.

26, 1831. John Sims, M.D. F.R.S. & F.L.S. died, ætat. 82.

This eminent physician and botanist died at Dorking in Surrey. He was editor of *Curtis's Botanical Magazine*, from its 14th to 42nd volume, and contributed numerous articles to the *Medical Facts, and Medical and Physical Journal.*

* The sire turns o'er with patriarchal grace
The *big ha' bible*, once his father's pride.

Burns.

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MARCH.

The stormy March has come at last,
With wind, and cloud, and changing skies.
Bryant.

The third month, previous to the time of Numa Pompilius, was the first month of the year, and received its name of *Martius* from Romulus, in honor of his supposed father, Mars.

1. ST. DAVID,

The patron saint of Wales, was the son of a Welch prince, and uncle to the renowned King Arthur. Being distinguished for his eloquence and piety, he became bishop of St. David's, and died, according to most authorities, about the year 544, at a very advanced age. Bayle says he died in the year 642, at the great age of 146 years. He founded many monasteries and religious houses, and formed a hermitage and chapel in the vale of Llanthony, near the Black Mountains.

"A little lowly hermitage it was,
Down in a dale, hard by a forest's side,
Far from resort of people, that did pass
In travell to and fro: a little wyde
There was an holy chappelle edifyde,
Wherein the hermit duly wont to say
His holy things each morn and eventide,
Therebye a christall streame did gently play,
Which from a sacred fountaine welled forth alway."

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On this day, it is said the Welsh gained a decisive victory over the English, and that previous to the battle, they stuck leeks in their hats by the advice of St. David, to distinguish themselves from the enemy. From this arose the practice, still observed, of wearing leeks on this day.

2. St. Chad.

He was born in Northumberland, and educated in the monastery of Lindisfarne. He became bishop of York, and afterwards bishop of Litchfield, in which city he died, during a great pestilence in 672.

2, 1797. Horace, Earl of Orford, died.

The annexed view of *Strawberry Hill*, derives interest from its having been so many years the residence of Horace Walpole. The house was originally of very small dimensions, and at different periods tenanted by Colley Cibber, Talbot bishop of Durham, the Marquis of Carnarvon, Lord Sackville, and Mrs. Chenevix, a noted toy-woman. It was purchased in 1747 by Mr. Walpole, who enlarged and altered it into its present gothic appearance. In a letter to Marshall Conway, dated June

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8th, 1747, Mr. Walpole says: "It is set in enemelled meadows, with phillagree hedges,

> A small Euphrates through the piece is roll'd,
> And little fishes wave their wings in gold.

Two delightful roads, that you would call dusty, supply me continually with coaches and chaises: barges as solemn as Barons of the Exchequer, move under my window. Richmond Hill, and Ham walks, bound my prospects; but, thank God, the Thames is between me and the Duchess of Queensberry. Dowagers as plenty as flounders, inhabit all around, and Pope's ghost is just now skimming under my window, by a most poetical moonlight."

4. Quinquagesima, or Shrove Sunday.

This invariably falls on the Sunday preceding Shrove Tuesday, and seven weeks before Easter. It is called Quinquagesima, from being about the seventieth day before Easter.

6. Shrove Tuesday.

Shrove tide signifies the time of confessing sins, and was anciently set aside for that purpose.

Many foolish, and even barbarous, customs were formerly practised on this day; such as bull-baiting, cock-fighting, whipping the cock, &c. Alluding to these cruelties, Sir Charles Sedley, in an *Epigram on a Cock*, says:

> "May'st thou be punished for St. Peter's crime,
> And on Shrove Tuesday perish in thy prime."

The custom appears formerly to have been a source of parochial profit. In the parish accounts of Pinner, at

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Harrow on the Hill, in 1622, is the following entry:—"Received for cocks at Shrove-tide, 12s." and in 1628, "Received for cocks in Towne, 19s. 10d.—out of Towne, 6d." In a royal household account of the time of Henry VII. is the following:—"March 2, 7th Henry VII. Item: to Master Bray, for rewards to those that brought cockes at Shrove-tide, to Westminster, xxs." These appalling practices, however, no longer disgrace the country, and the observation of the antiquarian Hardiman, in his *History of Galway*, may be applied to all places where these degrading practices formerly took place. Mr. Hardiman says:—"Several old and vulgar ceremonies, formerly in esteem, have long since disappeared. It is many years since the savage practice of bull-baiting has been laid aside; Chanticleer need no longer tremble at the approach of Shrove-tide, and the public cock-pit, formerly in such request, now lies deservedly neglected."

7. Ash Wednesday,

The first day of Lent, supposed to have been so called from a custom in the church, of sprinkling ashes that day on the heads of penitents then admitted to penance.

Several religious ceremonies depend upon the use of ashes. St. Jerome relates, that the Jews, in his time, rolled themselves in ashes, as a sign of mourning. To repent in sackloth and ashes, is a frequent expression in Scripture for mourning, and being afflicted for our sins. A heifer being sacrificed upon the great day of expiation, its ashes were distributed among the people, who made from them a sort of lustral water, which they used in purifications, by sprinkling it on such persons as had

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defiled themselves by touching a dead body, or being present at a funeral, (Numb. xix. 17).

7. ST. PERPETUA,

A lady of noble family, who suffered at Carthage for her adherence to Christianity, during the persecution of the Emperor Serverus, in the year 203.

11. QUADRAGESIMA, OR FIRST SUNDAY IN LENT,

So called from its being the Quadragesimal, or commencement of the forty days' fast.

12. ST. GREGORY,

Usually called the Great, was born at Rome about the year 540, elevated to the Papal Chair in 590, and died in 604. He was a man of extensive learning, and sincere piety, and being much attached to music, composed numerous hymns and chants.

17. ST. PATRICK,

The patron Saint of Ireland, was born about the year 371, in the village now called Kilpatrick, near Glasgow. The introduction of Christianity into Ireland was effected principally through his exertions. He died at Down, in Ulster, in the year 493.

18. EDWARD, KING OF THE WEST SAXONS,

Son of King Edgar, born in the year 962, and ascended the throne in 975. He was treacherously stabbed at Corfe Castle, Dorsetshire, by order of Elfrida, his stepmother, in the year 979.

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19, 1710. THOMAS KEN, D.D. DIED, ÆTAT. 73.

THE GRAVE OF KEN.

BY THE REV. W. LISLE BOWLES.

On yonder heap of earth forlorn,
Where Ken his place of burial chose,
Peacefully shine, O sabbath morn!
And eve with gentlest hush repose.

To him is rear'd no marble tomb
Within the cathedral fane,
But some faint flowers of summer bloom,
And silent fall the winter's rain.

No village monumental stone
Records a verse, a date, a name;
What boots it? When thy task is done,
Christian, how vain the sound of fame!

Oh, far more grateful to thy God
The voices of poor children rise,
Who hasten o'er the dewy sod,
To pay their morning sacrifice.

And can we listen to their hymn,
Heard, haply, when the evening knell
Sounds, where the village tower is dim,
As if to bid the world farewell,

Without a thought, that from the dust
The morn shall wake the sleeping clay,
And bid the faithful and the just
Upspring to heaven's eternal day.

21. ST. BENEDICT,

The founder of the Benedictine Order of Monks, was born at Norcia, in Italy, in the year 480. He was remarkable for his austerity and piety, and died, while in fervent prayer, at the age of 63, in the year 543.

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23. Archdeacon Churton died, ætat. 76.

The venerable Ralph Churton, M. A., Archdeacon of St. David's, Rector of Middleton Cheney, Northamptonshire, and F. S. A., was born December 8, 1754, at Snabb, in Cheshire. Losing both parents at an early age, the rector of the parish, Dr. Townson, took him under his protection, and, in 1772, sent him to Brasennose College, Oxford. In 1785 he was appointed Bampton Lecturer, in 1788 Whitehall Preacher, in 1792 Rector of Middleton Cheney, and in 1805 Archdeacon of St. David's.

Besides his *Bampton Lectures*, he published several other volumes, among which are *Memoirs of Dr. Townson; Bishop Smyth; Sir R. Sutton; Dean Nowell; and Doctor Chandler;* also various *Sermons*, and a *Preface of the Church of England.* He was a liberal contributor to other authors, as was evinced by his communications to the *History of Cheshire; Baker's History of Northampton; Nicholl's Literary Anecdotes, &c.*

Among his friends and correspondents he numbered many of eminent character; and at one period was in the habit of spending his Christmas at Selborne, with that amiable naturalist, and sincere Christian, Gilbert White, who termed the visit a "winter migration." "For," wrote the rural philosopher, "if you cannot be as regular as a ring-ousel or a swallow, where is the use of all your knowledge, since it may be outdone by *instinct?*"

In a letter to Bishop Heber, on his appointment to the see of Calcutta, Archdeacon Churton writes:—"When I was left, more than fifty years ago, a fatherless and motherless boy, an honest laborer on the farm suggested to me this natural source of consolation—'You will now have the prayers of the church for you.' May you find in this thought the comfort which I then found: for you also will now remember, if your spirit should incline to sink under your arduous duties, that you have the prayers of the church for you."

25. Annunciation of the Blessed Virgin Mary, or Lady Day.

The festival of the annunciation commemorates the

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glad tidings brought by the angel Gabriel to the Virgin Mary concerning the Saviour of the World. It was first instituted in the year 350.

25, 1738. TURLOGH O'CAROLAN DIED, ÆTAT. 67.

Carolan, of whose biography little has been hitherto known, has lately had justice done to his memory in a work entitled *Irish Minstrelsy;* to which is attached an able memoir of the blind bard, from the pen of the editor, Mr. Hardiman. From this we learn that Carolan was born at Newtown, in the county of Meath, about the year 1670, of an old and respectable family, who, however, became reduced during the political troubles of that period. In his eighteenth year he was deprived of sight by an attack of the small pox; to assuage the anguish of which, he learned to play the harp; and from this circumstance his genius was, by degrees, brought forth, and he produced those songs and airs that will ever rank him foremost among the bards of his own poetic country.

After tracing him through the various scenes of his chequered life, Mr. Hardiman says:—"The time was now drawing nigh when Carolan was himself to become a subject for the elegiac muse. In the year 1737, his health, which had been long declining, gave evident symptoms of approaching dissolution. At Tempo, finding himself growing weak, he resolved to proceed to Alderford, the house of his old and never-failing friend and patroness, Mrs. M'Dermott, who, though then nearly in her eightieth year, enjoyed excellent health and spirits. By her, in his youth, nearly fifty years before, he was supplied with his first harp and his first horse; and to her, in the decline of life and health, he turned for a sure asylum, and a kind and affectionate reception. Having composed his "Farewell" to Maguire, he proceeded on horseback to his friend Counsellor Brady's, near Balinamore, in Leitrim, where he rested for a few days. He then continued his journey, accompanied by several of the neighbouring gentry, and a concourse of the country people, among whom he was always held in the highest veneration, towards Lahire,

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the seat of Mr. Peyton. Here he stopped for a few moments, and, with tears, took leave of his friends. During the remainder of his journey, it is not improbable that his mind was occupied by thoughts somewhat similar to those afterwards expressed by his countryman, Goldsmith * :—

> In all my wand'rings round this world of care,
> In all my grief (and God has given my share,)
> I still had hopes, my long vexations past,
> Here to return, and die at home at last.

"At Alderford he was received with the warmth and welcome which have ever characterised Irish friendship. After he had rested a little, he called for his harp. His relaxed fingers, for a while, wandered feebly over the strings, but soon acquiring a momentary impulse, he played his well-known "Farewell to Music," in a strain of tenderness and feeling which drew tears from the eyes of his auditory. This was his last effort. Nature was subdued; and the dying bard was carried, in a state of exhaustion, to his room. He lingered for some time. The woman who attended him, and who lived until about the year 1787, used to relate, that to revive or stimulate decaying nature, he was occasionally indulged with a *taste* of his favorite beverage, *Usquebaugh*. His natural vivacity and good humour never forsook him. A few hours before his death, while in the act of stretching forth his hand for the cup, as he humourously said, to give it his farewell kiss, he rolled out of bed on the floor. The female attendant alluded to, stated that after she had replaced him, he observed, with a smile, "Maudy,

"* Oliver Goldsmith was born, and until his fifteenth year resided, not far from where Carolan spent the greatest part of his life. Although but ten years old at the death of the bard, it is evident that he was well acquainted with his genius and character. This may be deduced even from the trifling Essay on "Carolan the blind," which appears in his works; and which, if really written by Goldsmith, confers no great credit on his memory. This ingenious man was descended from one of our "Clerical families," who were generally a prejudiced class; and his historical works, at least, prove that he never entirely laid aside the prejudices of early education.

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I often heard of a person falling when going to the field, but never knew one to fall while lying but myself." His last moments were spent in prayer, until he calmly breathed his last*. When his death was known, it is related, that upwards of sixty clergymen, of different denominations, a number of gentlemen from the surrounding counties, and a vast concourse of country people, assembled to pay the last mark of respect to their favourite bard. All the houses in Ballyfarnon were occupied by the former, and the people erected tents in the fields round Alderford House. The harp was heard in every direction. The wake lasted four days. On each side of the hall was placed a keg of whiskey, which was replenished as often as emptied. Old Mrs. M'Dermott herself joined the female mourners who attended, to weep, as she expressed herself, "Over her poor gentleman, the head of all Irish music." On the fifth day his remains were brought forth, and the funeral was one of the greatest that for many years had taken place in Connaught. He was interred in the M'Dermott Roe's vault, in their chapel, at the east end of the old church of Kilronan.

"On opening the grave, in 1750, to receive the remains of a Catholic clergyman, whose dying request was to be interred with the bard, the scull of the latter was taken up. The Hon. Thomas Dillon, brother to John, Earl of Roscommon, caused it to be perforated a little in the forehead, and a small piece of ribbon to be inserted, in order to distinguish it from similar disinterred remnants of mortality. It was placed in a

"* Carolan's death was thus recorded by his devoted friend and admirer, the venerable Charles O'Conor.—"On Saturday, 25th March, 1738, TURLOGH O'CAROLAN, the talented and principal musician of Ireland, died, and was interred in Kilronan, the church of the Duignan family, in the 68th year of his age. May the Lord have mercy on his soul, for he was a moral and religious man."—See *Cat. Stow. MSS.* vol. i. p. 146, for the original Irish. Doctor O'Conor adds, "This memorandum is in the hand-writing of Carolan's friend, the late Charles O'Conor of Belanagare, who ever spoke of him in terms which reflected back upon his own character, the lustre which they shed on that of the last of the Irish bards."

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niche over the grave, where it long remained an object of veneration, several persons having visited the church for the sole purpose of seeing this relic of a man, so universally admired for his musical talents. At length, in the year 1796, it disappeared. A person on horseback, and in the garb of a gentleman, but supposed to have been a northern Orangeman, came to the church, and desired to see it. It was brought from the niche, and, watching his opportunity, he discharged a loaded pistol at it, by which it was shattered to pieces*. Then, damning all Irish papists, he rode away. Some neighbouring gentlemen pursued him as far as Cashcargin, in the county of Leitrim; and from their excited feelings at the moment, it was, perhaps, fortunate that he escaped. This brutal act could be perpetrated only through the demoniac spirit of party rage which then disgraced this unhappy country."

These volumes contain a number of translations from Carolan, which, for the first time, enables the English reader to appreciate the deserved celebrity of the "Bard;" and, for the preservation of which, the learned Editor deserves the thanks of his countrymen, as well as of every admirer of genuine and neglected genius.

The following elegy concludes the portion of the work devoted to Carolan.

"* Notwithstanding this act, and although the people of Kilronan show some fragments which they assert to be those of the scull, yet it is confidently stated that it may be seen, perfect and entire, in the museum at Castlecaldwell, co. Fermanagh, having been presented to Sir John Caldwell, by the late George Nugent Reynolds, Esq., who took it privately from Kilronan for the purpose. This, however, may be doubted. Mrs. M'Namara, the sister of Mr. Reynolds, does not believe it, never having heard it mentioned in her family until lately; and thinks it must be some other pericranium which her brother, who was a facetious gentleman, imposed on the connoisseur, by way of joke, for that of Carolan. A cast of the Castlecaldwell relic is about being sent to the Phrenologists of Edinburgh; but, probably, the portrait prefixed to this volume, would prove more satisfactory to those gentlemen."

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MAC CABE'S ELEGY ON THE DEATH OF CAROLAN.

TRANSLATED BY THOMAS FURLONG.

Woe is my portion! unremitting woe!
Idly and wildly in my grief I rave;
Thy song, my Turlogh, shall be sung no more—
Thro' festive halls no more thy strains shall flow:
The thrilling music of thy harp is o'er—
The hand that wak'd it moulders in the grave.

I start at dawn—I mark the country's gloom—
O'er the green hills a heavy cloud appears;—
Aid me, kind Heaven, to bear my bitter doom,
To check my murmurs, and restrain my tears.

Oh! gracious God! how lonely are my days,
At night sleep comes not to these wearied eyes,
Nor beams one hope my sinking heart to raise—
In Turlogh's grave each hope that cheer'd me lies.

Oh! ye blest spirits, dwelling with your God,
Hymning his praise as ages roll along,
Receive my Turlogh in your bright abode,
And bid him aid you in your sacred song.

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APRIL.

Changeful April, thou dost bring
Tidings glad of lovely Spring.

The fourth month derived its name from *Aprilis*, of *apezio*, I open; because the earth, in this season, begins to open her bosom for the production of vegetables.

1. Mid-Lent Sunday.

The fourth Sunday in Lent, and mid-way between Quadragesima and Easter Sundays. It was formerly sometimes called Mothering Sunday, from an ancient usage of visiting the Mother, or Cathedral, churches of the dioceses; when voluntary offerings were made by the parishioners, which, by degrees, were settled into an annual composition, and gave rise to what is now termed Easter offerings.

1. All Fool's Day.

A very ancient custom still prevails of making "fools" on this day; which chiefly consists in sending persons on needless or silly errands; or to look for what is not to be found or seen.

The origin of this custom is buried in complete

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obscurity. It has been conjectured that it has an allusion to the mocking of Jesus Christ by the Jews. A learned Rabbi has supposed it to have originated in the mistake of Noah, in sending the dove out of the ark before the waters of the deluge had abated on the first day of the month, among the Hebrews, which answers to the present first of April. These, however, are mere suppositions, and we think very far removed from the real origin.

3. Richard, Bishop of Chichester,

Surnamed De Wiche from the place of his birth in Worcestershire. He was consecrated bishop in 1245, and died in 1253. His name was canonized by Pope Urban IV. in the year 1262.

4. St. Ambrose,

One of the most eminent fathers of the church in the fourth century. He was a citizen of Rome, born at Arles, in France, about the year 334, ordained bishop of Milan in 374, and died in 397. On many accounts his character stands deservedly high. With unvarying steadiness he delivered his religious sentiments on all occasions; with unwearied assiduity he discharged the duties of his office; with unabated zeal and boldness he defended the orthodox cause, in opposition to the Arians; with a liberal hand he fed the numerous poor who flocked to his dwelling; with uncommon generosity he manifested kindness to his adversaries; and with Christian affection he sought the happiness of all men. His general habits were amiable and virtuous, and his powers of mind were uncommonly vigorous and persevering.

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4, 1831. JOHN QUICK DIED, ÆTAT. 83.

This celebrated comedian was born in Whitechapel in 1748; and at the age of fourteen joined a strolling company at Fulham, where he first appeared as Altamont in the Fair Penitent, with so much applause that the manager desired his wife to set him down a full share, which, at the end of the evening's performance, amounted to three shillings. He afterwards performed leading tragic and comic characters in various parts of the country. In 1769 he was engaged by Mr. Foote at the Haymarket Theatre, where he became a universal favourite. He was the original Tony Lumpkin, Acres, and Isaac Mendoza. In 1798 he quitted the stage, having amassed £10,000, and never after appeared, excepting a few nights at the Lyceum, after the destruction of Covent Garden Theatre. He may be considered as the last of the Garrick school.

12, 1831. THE REV. BASIL WOODD, M.A. DIED, ÆTAT. 70.

This zealous and indefatigable minister was born at Richmond, in Surrey, on the 5th of August, 1760; and at the age of seventeen became a student at Trinity College, Oxford, where he obtained the degree of Master of Arts in 1785. In 1783 he was ordained Deacon, at the Temple Church, and the year following a priest, at Westminster Abbey. Shortly after he was chosen lecturer of St. Peter's, Cornhill; in 1785 morning preacher at Bentinck chapel, Mary-le-bone; and in 1808 was presented with the rectory of Drayton Beauchamp, in Buckinghamshire.

Mr. Woodd was a strenuous supporter of all missionary, bible, and school societies; and was author of numerous tracts and discourses, some of which have become extremely popular, particularly *The Church Catechism with explanations*, and *The Faith and Duty of a Christian*.

15. PALM SUNDAY.

This is the sixth Sunday in Lent. The week preceding it is called Passion week, and the week which follows it Holy week. It is called Palm Sunday from

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an ancient custom of bearing palm in procession on this day, in commemoration of our Saviour's entry into Jerusalem riding on an ass, when palm boughs were strewed on the roads. Formerly, in some places, a wooden ass was drawn through the streets in memory of that on which Christ rode.

18, 1831. JOHN ABERNETHY, F.R.S. DIED, ÆTAT. 66.

This eminent surgeon was born about the year 1763-4, but whether in Scotland or in Ireland is uncertain. At an early age his parents removed to London, and young Abernethy was sent to a day-school in Lothbury, where he received his education. In due time he was bound apprentice to Mr., afterwards Sir Charles, Blick, Surgeon to St. Bartholomew's Hospital, where he pursued his studies with great advantage. In 1773 the celebrated John Hunter commenced his admirable lectures, and Abernethy became one of his pupils; from which arose a lasting friendship between these eminent men. In 1780, through Mr. Hunter, he was appointed assistant surgeon to St. Bartholomew's Hospital; and shortly afterwards lecturer on anatomy and surgery. The new and bold view which he took of his subjects made a deep impression on his auditors and gained him considerable notoriety.

In 1793 he published *Surgical and Physical Essays;* which extended the reputation he had already acquired. These Essays were followed, at various periods, by *Surgical Observations*, the fame of which soon carried his name over the Continent of Europe. Among his other works are, *On the Origin and Treatment of Local Diseases; Physiological Lectures; On Injuries of the Head,* &c. All of which are consulted by the faculty, as the best authority on all subjects which they embrace.

There was a bluntness approaching to rudeness in Mr. Abernethy, which greatly annoyed many of his visitors: and which caused some wit to anagram his name into *Johnny the Bear*. His strong point in prescribing was generally addressed to the relief of the bowels, and to the lowering and regulation

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of diet and regimen. He was consequently much sought in dispeptic disorders; and often merely referred his patients to one of his books, where he had described the symptoms and given a recipe for their cure. On one occasion, a lady, unsatisfied with this information, persisted in extracting from Mr. A. what she might eat, and after suffering from her volubility some time he exclaimed, to the repeated "May I eat oysters, Doctor? May I eat suppers?" "I'll tell you what, Ma'am, you may eat any thing but the poker and bellows, for the one is too hard of digestion, and the other is full of wind."

Another characteristic anecdote is told of the celebrated Curran, who, it seems being personally unknown to him, had visited Mr. Abernethy several times, without having had an opportunity of fully explaining (as he thought) the nature of his malady; at last, determined to have a hearing, when interrupted in his story, he fixed his dark bright eye on the doctor and said, "Mr. Abernethy, I have been here on eight different days, and have paid you eight different guineas; but you have never yet listened to the symptoms of my complaint. I am, resolved, Sir, not to leave this room till you satisfy me by doing so." Struck by his manner, Mr. Abernethy threw himself back in his chair, and assuming the posture of a most indefatigable listener, exclaimed, in a tone of half surprise, half humour,—"Oh, very well, Sir, I am ready to hear you out. Go on, give me the whole—your birth, parentage, and education, I wait your pleasure; go on." Upon which Curran, not a whit disconcerted, gravely begun—"My name is John Philpot Curran. My parents were poor, but I believe honest people, of the province of Munster, where also I was born, being a native of Newmarket, county of Cork, in the year 1750. My father being employed to collect the rents of a Protestant gentleman of small fortune, in that neighbourhood, obtained my entrance into one of the Protestant Free-schools, where I obtained the first rudiments of my education. I was next enabled to enter Trinity College, Dublin, in the humble sphere of a *sizer*;" —and so he continued for several minutes, giving his astonished hearer a true, but irresistably laughable account of his "birth, parentage, and education," as desired, till he came to his ill-

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ness, and sufferings, the detail of which was not again interrupted. It is hardly necessary to add that Mr. Abernethy's attention to his gifted patient was, from that hour to the close of his life, assiduous, unremitting, and devoted.

The reported fashion of his courtship and marriage, is also characteristic. It is said, that while attending a lady for several weeks, he observed those admirable qualifications in her daughter, which he truly esteemed to be calculated to render the married state happy. Accordingly, one Saturday, when taking leave of his patient, he addressed her to the following purport: "You are now so well, that I need not see you after Monday next, when I shall come to pay you my farewell visit. But, in the mean time, I wish you and your daughter seriously to consider the proposal I am now about to make. It is abrupt and unceremonious I am aware, but the excessive occupation of my time, by my professional duties, affords me no leisure to accomplish what I desire by the more ordinary course of attention and solicitation. My annual receipts amount to £———, and I can settle £——— on my wife: my character is generally known to the public, so that you may readily ascertain what it is: I have seen in your daughter a tender and affectionate child, an assiduous and careful nurse, and a gentle and lady-like member of a family; such a person must be all that a husband could covet, and I offer my hand and fortune for her acceptance. On Monday, when I call, I shall expect your determination; for I really have not time for the routine of courtship." In this humour the lady was wooed and won: and we believe we may add, the union was felicitous in every respect.

With all his eccentricity, however, he blended much of humanity and liberality. Mr. Jerdan (to whose National Portrait Gallery we are chiefly indebted for the foregoing) says, "Where poverty and disease have prevented individuals from waiting upon him in his own house for advice, we have known him not only visit them constantly and at inconvenient distances, without either fee or reward, but generously supply them from his own purse with what their wants required. More affecting instances of charity and generosity seconding the utmost exertions of medical skill could not be produced from the

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life of any of his contemporaries than from that of John Abernethy: and if it were ours to strike a balance between the harmless eccentricities we have noticed and the incalculable mass of good he has done, we would set him high among the highest on the pedestals of those who have done honor to a profession, second only to one in the scale of human hopes and happiness."

Mr. Abernethy had been long indisposed, but had only retired from practice a few months when he died at his house in Enfield.

19. St. Alphege,

Or Elphege, was born in Gloucestershire, and educated at the monastery of Deerhurst. He became bishop of Winchester in 984, and archbishop of Canterbury in 996. He was killed at Greenwich by the Danes during their incursions in Kent, in the year 1012.

20. Good Friday,

Or, as it was formerly termed, Holy Friday, is the anniversary of our Saviour's crucifixion; and has been held as a solemn fast from the earliest period of Christianity.

Oh! King of wounds! oh, Son of heaven! who died
Upon the cross, to save the things of clay—
Oh, thou whose veins pour'd forth the crimson tide,
To wash the stains of fallen man away;
Oh, thou whose heart did feel the blind one's spear,
While down to earth the atoning current flow'd!
Deign, gracious Lord, thy creature's cry to hear!
Shield me, and snatch me to thy bright abode.

Carolan—*Irish Minstrelsy.*

Hot cross buns are eaten to day throughout Europe, and is a very ancient custom; its origin is, however, unknown.

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22. Easter Sunday.

This day commemorates the anniversary of the resurrection of our Saviour; and is kept with great pomp and solemnity in most countries, particularly at Rome, where the Pope assists personally at high mass.

23. St. George,

The patron saint of England, of whom very little is known. He is said to have been born at Cappadocia, and was a soldier by profession. Having presumed to complain to the Emperor Diocletian of his cruelties to the Christians; he was, in consequence, thrown into prison, and afterwards beheaded in the year 303.

23, 1616. William Shakspeare died, ætat. 52.

Mr. Brewer, in his Topography of Warwickshire, speaking of Stratford-upon-Avon, says:—"The most interesting of the ancient domestic structures is *the house in which Shakspeare was born.* This building is situate in Henley Street, and remained the property of the Hart family, descended from Jane, the sister of Shakspeare, until 1806, in which year they parted with it by sale. The premises, originally occupied as one

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dwelling, are now divided into two habitations; the one being used as a butcher's shop, and the other as a public-house, known by the sign of the Swan and Maiden's Head. The outer walls of the whole were divided into panels by strong pieces of timber; but a brick front has been substituted in that part of the building now used as a public-house or inn; the ancient form is yet preserved in the other half, or butcher's premises."

25. St. Mark,

The evangelist and patron saint of Venice, was by birth a Jew, but becoming a convert to Christianity, he was sent by St. Peter into Egypt to propagate his new faith. During his residence at Alexandria the populace dragged him from the church and through the streets till he expired. Numerous ceremonies are observed on this day in various Catholic countries, particularly at Venice.

25, 1776. Duchess of Gloucester born.

The princess Mary was married to her cousin, William Frederick, Duke of Gloucester, July 22, 1816.

29. Low Sunday.

The first Sunday after Easter is called Low Sunday, because formerly the service of Easter Sunday was repeated on this day in a *low* or abridged form.

1831. Captain George Matthew Jones died.

Captain Jones was brother to Colonel J. T. Jones of the Royal Engineers, the constructor of the lines of Torres Vedras, and the officer who led the attack upon Bergen-op-Zoom. Having entered the Navy under Sir Joseph Yorke, he received his first commission in 1802. After active service in several places, he obtained post rank in 1818. In 1827 he published *Travels in Norway, Sweden, Finland, Russia, and Turkey;*

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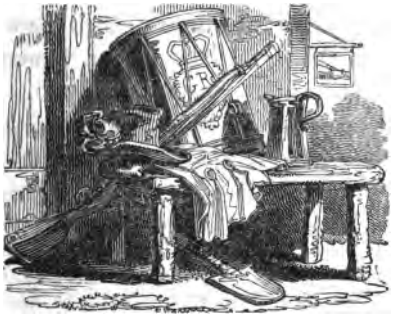
also on the Coast of the Sea of Azof and of the Black Sea, in 2 vols. Previous to these travels, which were undertaken with a view to the acquisition of professional knowledge, he had already inspected all the naval arsenals and ports of France and Holland; and in this work relates the results of his examination of them, as well as those of Russia, Sweden, and Denmark; presenting a great mass of accurate information on the amount and condition of the maritime force of most of the European powers.

Shortly after his travels, being attacked with a paralysis of his limbs, he repaired to Italy for the recovery of his health. In a state of great debility he had the misfortune to fall down a flight of stone steps at Malta; when three of his ribs were broken and his shoulder dislocated, which caused his death on the third day.

1831. THE KING OF SARDINIA DIED, ÆTAT. 66.

Charles-Felix-Joseph, King of Sardinia, Duke of Savoy, Piedmont, and Genoa, was born April 6, 1765; and ascended the throne on the abdication of his brother, King Victor Emanuel, March 13, 1821. On the 6th of April, 1807, he married Maria Christina, daughter of the King of the Sicilies, but having no issue, the crown descended to a cousin, Charles Amadeus, Prince of Savoy-Carignan. Two of the late King's sisters were married to Louis XVIII. and Charles X. of France.



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MAY.

Among the changing months, May stands confest
The sweetest, and in fairest colours drest.

Thomson.

The fifth month derived its name either from Maia, the mother of Mercury, or Maia, one of the Pleiades, and daughter of Atlas. Others, however, suppose it to have been named Maius by Romulus, in honor of the nobles and senators of Rome.

1. MAY DAY.

This day was formerly one of much rural festivity in England, and the May-pole adorned most rural districts. The opening bounties of Providence which the season puts forth seemed to awaken the gratitude of mortals in their innocent festivity. The custom, however, has now fallen into total disuse.

Olaus, in his History of the Northern Nations, says: "On the first of May the country is divided into two bands, the captain of one of which hath the name and appearance of Winter, is clothed in skins of beasts, and he and his band armed with fire-forks. They fling about ashes, by way of prolonging the reign of Winter; while another band, whose captain is called Florro, represent

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Spring, with green boughs such as the season offers. These parties skirmish in sport, and the mimic contest concludes with a general feast."

Another custom is mentioned by Waldron in his History of the Isle of Man, published in 1731 :—"In almost all the great parishes they choose from among the daughters of the most wealthy farmers, a young maid, for the Queen of May. She is drest in the gayest and best manner they can, and is attended by about twenty others, who are called maids of honour. She has also a young man, who is her captain, and has under his command a good number of inferior officers. In opposition to her, is the Queen of Winter, who is a man drest in woman's clothes, with woollen hood, fur tippet, and loaded with the warmest and heaviest habits, one upon another; in the same manner are those who represent her attendants, drest; nor is she without a captain and troop for her defence. Both being equipt as proper emblems of the beauty of the spring, and the deformity of the winter, they set forth from their respective quarters; the one preceded by violins and flutes, the other with the rough music of the tongs and cleavers. Both companies march till they meet on a common, and then their trains engage in a mock battle. If the Queen of Winter's forces get the better, so far as to take the Queen of May prisoner, she is ransomed for as much as pays the expences of the day. After this ceremony, Winter and her company retire, and divert themselves in a barn, and the others remain on the green, where, having danced a considerable time, they conclude the evening with a feast; the queen at one table with her maids, the captain with his troops at

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another. There are seldom less than fifty or sixty persons at each board, but not more than three or four knives."

THE VISION OF O'DONOGHUE ON MAY MORNING.*

BY MISS M. L. BEEVOR.

To roam,—to muse,—to hail the sun
On the glorious dawn of May
I rose;—deliciously begun
That aye remember'd day.

A breeze sigh'd o'er the blue, serene
Young Heav'n, of holy haunted *Lean*,
Soft and sweet as their feathery breath
Who've never tasted of tears and death!
And sweet and soft, was the transient kiss
It press'd on that lone, romantic shore,
Whose green vitality seem'd to bless
A breath, escap'd by the gates of bliss
From Heav'n,—an air, whose sighings o'er
The sylvan wilderness,
To life awoke in its freshest spring
Each sheathed bud, and delicate wing!
Bright was the lake,—and calm it seemed
As the virgin's eyes of grace,
When visions upon her soul have beam'd,
(Where Heav'n alone hath place)
In beautiful wilds, as she fondly dream'd

* For "*The Legend of O'Donoghue*" the reader is referred to Mr. T. C. Croker's admirable "*Fairy Legends of the South of Ireland*," and "*Killarney Legends*." It may be, however, as well to observe, that the Irish in the vicinity of Loch Lean, or Killarney, believe that O'Donoghue, a virtuous and beloved prince of other days, rises on the morning of the first of May, from *Thierna na Oge*, i.e. The Land of Immortal Youth, situated beneath the waters, in order to bless the country which, and the descendents of the people whom, once he governed.

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Each odorous breeze was the spicy sigh
Of a seraph, on air-wings floating by;
Yea, like the eyes of such maid as this
Shone the Lean, on that morn of bliss!

I roam'd,—nor were my dreamings few,
I'the dawn of festive May,
When shadowy mists of sapphirine hue,
Encradled infant day;
When the familiar wilds seem'd new
And unimaginably bright;
When the lone mystic lake-shore grew,
Unto my marv'lling sight,
A Paradise of foliage,—flowers,—
Of waters,—winds,—and peace,—
Wherein the silent, golden hours
Unrack'd should lapse,—nor cease
Eternally to bless:—
But lo! the lake
Did, as I gaz'd, its quietude forsake;—
I mark'd its bosom swell, and waves increase,
Which, with a bound, on the green shore roll'd
Sparkling and flashing, in azure and gold,—
Like bridegrooms dight in their boon array
For the dearest, the holiest festal day!

Then, from beneath those gem-like springs,
With music, whose magic utterings
May ne'er by mortal lips be told,
Leapt water-sylphids to unfold
Their glittering, gossamer wings:
And then, majestic from the *Land of Youth*,
Land of the soul's ineffable repose,—
The Righteous Prince of other years arose,
With cloudy plumes, which like the drifting snow,
Curl'd in translucent air;
With milk-white steed, and armour bright as truth,
Whilst, all ethereal were
By years unchang'd, unscath'd by care,
His peerless form, and his divinest brow!

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Whilst his eyes glancing o'er earth and sky,
Beam'd love, which might neither wane nor die,
And he came,—he came,—from his Home of Peace,
To bid the stores of our land increase!

Up! Up! and away! his courser sprung
With a wild, resistless bound,—
Its silvery hoofs on the waters rung
Faint as on mossy ground;
Whilst spray from the flashing waves was flung,
Like crystal-dust,—around
Horsemen,—horse,—and those who sung
Lays, in their unwritten tongue,
To the Knight of the Glittering Mail.—
A jocund throng of the deathless young,
Who trod the buoyant gale,
Like sylphic graces, and fairy hours,
Together link'd by amarant flowers!*
With laughing eyes, and twinkling feet,
With twining arms, and measures sweet
As their Peri forms of light,
Around, and o'er O'Donoghue
Whirl'd th' immortal,—joyous crew,—
The ever blest, and bright!—
Whose breath was song, and whose rainbow wings
Were of thousand odours, the thousand springs.

On,—on,—the steed and the warrior rush'd,
And up,—the delicate waters gush'd
In diamond drops, like the jewels set
On the wreath, his fairy coronet;
Whilst his plumes snow-white, and his baldric blue,
(Rivalling pale morn's sapphirine hue)
Kiss'd in the conscious breeze as they met.

I gaz'd on this gorgeous pageantry
With a strange delight,—with a joyous awe,—
But soon,—*too* soon,—and alas! I saw,
(Like those from mocking gramarye,

* Immortal AMARANT, &c,—*Milton.*

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Or dreams as ravishing, who wake)
Nought upon mountain, forest, or lake,
Save morn, in clear coldness shining on;
Her pearly mists, and the vision, were gone!
But yet, as I linger'd, swept on mine ear
The echo of songs from a far, far sphere!

1. St. Philip, and St. James.

This day is dedicated to two Saints. The first was born at Bethsaida, and after the ascension of our Saviour, preached the gospel in Phrygia, where he died at an advanced age. The other, St. James the Less, was the author of the Epistle in the New Testament, and was killed during a tumult in the Temple, in the year 62.

2, 1831. William Hamper, F.S.A. Ætat. 54.

This able antiquary was born on the 12th of December, 1776, and in early life travelled over various parts of England, visiting every object of antiquity and interest within his route; the results of which he afterwards, at various times, communicated to the *Gentleman's Magazine*. The *Archæologia* also contains many papers of interest from his pen; and most of the topographical works of the day received his assistance. His principal work is a *Memoir of the Life and Writings of Dugdale*, the Monastic Antiquary; which evinces great learning and research. He was an extensive manufacturer at Birmingham, and died at Highgate, near that town.

3. Invention of the Cross.

This festival, though in the Protestant Calendar, is kept only in the Catholic church. It commemorates the finding the supposed cross of Christ at Jerusalem, by St. Helena, the mother of the emperor Constantine, in the year 326.

6. St. John the Evangelist, ante P.L.

St. John, in his old age, during the persecution of Domitian, was sentenced to be thrown into a cauldron

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of boiling oil, for preaching the Christian doctrine; but from which punishment, he is said to have remained uninjured. This miraculous event occurred before the gate called *Porta Latina*, which is the reason of the letters A. P. L. being put after his name, on this day.

19. ST. DUNSTAN.

He was born at Glastonbury in 924, and was successively bishop of London and Worcester, and archbishop of Canterbury. He was one of the most learned scholars of his age, and proficient in painting, sculpture, and music. He died in the year 988.

22, 1770. PRINCESS OF HOMBERG BORN.

Elizabeth, sister to his Majesty, was married April 7, 1818, to the Landgrave of Hesse Homberg, who died April 2, 1829.

25, 1831. ROBERT CLUTTERBUCK, F.S.A. DIED, ÆTAT. 59.

The author of a very able *History of the County of Hertfordshire*. He was born at Watford, June 28, 1772, and after finishing his education at Oxford, entered at Lincoln's Inn, with the intention of making the law his future study; but an ardour for chemistry and painting (which he studied under Barry) induced him to abandon his legal pursuits. On the death of his father he returned to Watford and succeeded him as a magistrate; he afterwards became deputy lieutenant of the county. The leisure of a greater portion of his life was devoted to the production of his County History, forming three large folio volumes, the engravings to which are equal to the most splendid of the kind ever produced, and will remain, to the latest posterity, as a monument of the taste and talent of the mind that produced them.

26. ST. AUGUSTIN, OR AUSTIN,

The first Archbishop of Canterbury, originally sent by

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Gregory the Great, into this country, to propogate Christianity: among his first converts was King Ethelbert. He died about the year 607.

27. Venerable Bede.

Bede, the brilliant ornament of the eighth century, and one of the most eminent fathers of the English church, was born in 672, near the mouth of the river Tyne in Durham. He lived a secluded life, and made himself master of every branch of learning. His writings form eight folio volumes. After his death, in 735, he was canonized by the Romish church.

27. Rogation Sunday,

The fifth Sunday after Easter, and second before Whit-Sunday. It precedes Holy Thursday, and was appropriated by the early christians, with the three following days, as a period of preparation for the devout observance of our Saviour's ascension.

29. King Charles II. restored.

The anniversary of the entry of Charles into London on his restoration to the throne after the commonwealth, in the year 1660.

A custom is still observed on this day of wearing oak leaves in commemoration of the King's concealment in an oak after the battle of Worcester.

31. Ascension Day, or Holy Thursday.

This festival is of great antiquity, and commemorates the ascension of our Saviour from the Mount of Olives.

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JUNE.

Jolly June, array'd
All in green leaves.
Spenser.

It was the opinion of Ovid that the sixth month derived its name from Juno, in honor of whom a festival was celebrated early in the month. Others suppose it to have been christened after Junius Brutus, or else from the youth of Rome, *in honorem Juniorem.*

1. St. Nicomede,

A priest of Rome, and a scholar of St. Peter's, who suffered martyrdom during the persecution of Domitian.

1, 1831. John Jackson, R. A. died, ætat. 48.

This eminent portrait painter was born at the village of Lastingham, in Yorkshire, May 31, 1778. His father was the village tailor, and the son for a time followed the same occupation. He had always a predilection for drawing, and at the age of nineteen ventured to commence at York as a painter of portraits. During one of its itinerant excursions, being at Whitby, the Earl of Mulgrave saw one of his sketches chalked on his lordship's hall table, which evinced so much genius that he resolved to foster it. Accordingly he recommended him to the Earl of Carlisle, at whose residence, Castle Howard, he had the advantage of studying the magnificent collection of pictures

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there, He also shortly after had the good fortune to meet with Sir George Beaumont, who liberally encouraged him.

Thus early patronised, he came to London in 1804, and the following year became a student at Somerset House. Such was his rapid progress that in 1807 he was established as a portrait painter, and each year added to his well-earned reputation. In 1816 he was elected an Associate, and in 1818 a Royal Academician. In 1819, during a tour in Italy, he was associated a Member of the Academy of St. Luke, at Rome.

As a portrait painter his merits are of a high order. He occupies a place between the fine, elegant detail of Lawrence, and the vigorous generalities of Raeburn; or as others word it, though perhaps less truly, he is a disciple of the school of Reynolds, and one of the cleverest of its followers. Where thought and intelligence were required, be readily supplied them: he rose and fell with his subject, and may be considered as one of the most honest of all the children of flattery. He had an uncommon readiness and skill of hand—a rapid felicity of finish, which enabled him to dash off at a few sittings whatever he undertook: his coloring was deep, clear, and splendid: and in this he more resembled Reynolds than any artist since his day.

His honors sat gracefully on him, and he used his powers with greater readiness and less show than most of his profession. He was mild and pious—firm of mind and upright of purpose: he painted nothing the worse because he read the Scriptures and kept its commandments, nor did his friends like him the less because he refused to work on the Sabbath, and abstained from mingling in the bitter bickerings of his brothers in art.

1, 1831. MATHER BROWN DIED.

A native of America, who came to England when a young man and studied under his countryman, the President West. He was a devoted follower of his profession, and in early life painted many subjects for Boydell's Shakspeare Gallery. He also painted George the Third, his queen, and most of the royal family, for his Majesty. For many years old age prevented

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his pursuing the art for profit, but a provident commencement enabled him to close a long life unchequered by the fears of want or privation.

5. St. Boniface.

St. Winfred, afterwards called Boniface, was born in Devonshire, about the year 680. He became primate of Germany and Belgium, and was murdered by the populace whilst preaching at East Friesland, in the year 755.

5, 1771. Duke of Cumberland born.

10. Whit Sunday.

This festival is celebrated seven weeks after Easter, and commemorates the descent of the Holy Ghost on the Apostles, after the ascension of our Lord.

10, 1831. Count Von Diebitsch Sabalkanski died, ætat. 46.

This celebrated soldier was descended from a noble Silesian family, and born May the 13th, 1785. He commenced his military career in the Prussian service, which he left on his father accepting a major-generalship on the staff of the Emperor Paul. At the battle of Austerlitz he was wounded by a spent ball, which lodged in the palm of his hand. He also distinguished himself in the actions of Eylau and Friedland, and in the celebrated campaign of 1812. At Dresden he received a severe contusion, and had two horses killed under him. He commanded the Russian army against the Poles in their struggle for independence; but the unsuccessful issue of his campaigns caused his dismissal: the chagrin this occasioned, joined to his excessive indulgence in the use of intoxicating liquors, appear to have occasioned apoplexy, of which he died.

11. St. Barnabas.

He was born at Cyprus, and descended from the tribe of Levi. After his conversion, he became a coadjutor

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with the Apostle Paul; and was stoned to death by the Jews, after undergoing many sufferings.

17. St. Alban,

Born at Verulam, in Hertfordshire, since called St. Alban's, in honour of the saint. After his conversion to Christianity, he preached the Gospel, for which he suffered martyrdom in the year 795.

17. Trinity Sunday,

The Sabbath following Whitsuntide, and a festival in honour of the union of Father, Son, and Holy Ghost.

18. 1814. Battle of Waterloo.

THE TRUMPET.

BY G. R. CARTER.

I have power, high power, for freedom,
To wake the burning soul!
I have sounds that through the ancient hills,
Like a torrent's voice might roll!
Mrs Hemans.

It startles the heart as its echo rings,
Each note to the wind replying,
And the brave young knight on his charger springs,
With his banner beside him flying.

He waves an adieu to the distant vale,
Where his childhood's home reposes,
And the beautiful skies of morning hail
The flush of the fragrant roses.

There are sheathless swords around him now,
And gorgeous hosts far gleaming;
And brightly o'er his dauntless brow
The sunlit plume is streaming.

The trumpet raises its proudest sound,
Sweet hopes to his heart recalling;
And tinged with blood is the verdant ground,
Where the youthful brave are falling.

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He dashes his charger fiercely on,
His foes retreat before him;—
His land is free, and his wreath is won,
And the trumpet's voice peals o'er him!

Alas! his triumph forebodes his doom!—
A stranger-hand has slain him;
And beneath the sward where roses bloom,
His weeping friends have lain him.

But the songs that live in his country's tongue
Shall embalm his heart with glory,
And his name shall proudly shine among
The immortal lights of story!

20. Translation of Edward, King of the West Saxons.

This day commemorates the translation, or removal, of the body of Edward the martyr, three years after its interment, from Wareham to Shrewsbury.—*(See page 40).*

21. Corpus Christi,

The body of Christ, a festival appointed to celebrate the blessings conferred upon mankind by the Holy Sacrament of the Eucharist. It always falls on the Thursday after Trinity Sunday. It was formerly observed with great solemnity, and in the eleventh year of the reign of Henry the eighth, it was ordered, that every person absent from Corpus Christi mass should forfeit a pound of wax.

In the registry of proceedings, of the parish of St. Ewen's, Bristol, the cost of a breakfast on this day, in the year 1460, is thus entered:—

	s.	*d.*
Item—For a calf's head and hinge . . .	0	3
Item—For two rounds of beef	0	6
Item—For bread and ale	0	8

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	s.	d.
Item—For Master Parson for his dinner .	0	4
Item—For his clerk	0	2
Item—For bearing the cross	0	2
Sum total . .	2s.	1d.

In the books of the same parish, for the year 1794, appears the following:—"A supper for the parish officers to settle their accounts, and to regulate the assessment of the poor-rate, £50. 17s. 2d."

21. The Longest Day.

This day, in London, is 16h. 13m. 5s., allowing 9m. 16s. for refraction.

24. Nativity of John the Baptist, and Midsummer Day.

St. John, the forerunner of our Saviour, was born in the year of the World 4004. He was beheaded through the contrivance of Herodias, at the age of thirty-four.

28, 1831. The Rev. Weedon Butler, M.A. died, ætat, 58.

Son of the Rev. Weedon Butler, and brother to Dr. Butler, late Head Master of Harrow-school. He was Rector of Great Woolstan, Bucks, and evening Lecturer of Brompton Chapel, Middlesex. Among other works he published *The Bagatelle*, consisting of original and translated poetry; *The Wrongs of Unterwalden*; and *Zimao, the African*.

29. St. Peter.

This day is a festival in honour of the apostle St. Peter, who was crucified during the persecution of the Emperor Nero. It is a day kept with great solemnity and splendour at Rome.

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30. 1831. WILLIAM ROSCOE DIED, ÆTAT. 80.

Mr. Roscoe's early career was attended with difficulties, that would have effectually prevented a mind of less persevering powers than his own from rising above the mediocre station in which Fortune had placed its possessor; but it is the enviable privilege of genius, with almost a certainty of overcoming every external difficulty, to convert the very disadvantages, which at first appeared to impede it, into its fairest marks of honor. Although almost wholly undirected in his studies, at the early age of sixteen, his poetical productions were such as would have done credit to any one whose talents had received their full cultivation; and he was at this time found sufficiently qualified to be admitted as an articled clerk into the office of Mr. Eyes, solicitor, of Liverpool. While engaged in the duties of his fatiguing occupation, and fulfilling them to the perfect satisfaction of his superior, he found means, by his own unassisted efforts, to acquire a proficiency in the Latin tongue. After the expiration of his articles, he entered into partnership with Mr. Aspinall, and it was at this period of his life that his abilities began to attract the notice and meet with the deserved applause of the public. An Ode, delivered before the Liverpool Society for the encouragement of Painting and Sculpture, was followed by a work upon the Slave Trade, entitled *A Scriptural Refutation of a Pamphlet lately published by the Rev. Raymond Harris*, and shortly afterwards by his principal poem, *The Wrongs of Africa*. Mr. Roscoe, in common with many leading spirits of his time, was at first captivated by the splendid dawning which preceded the desolating and tempestuous era of the first French Revolution, and while under the excitement of feelings, at that time common to the generality of the nation, producing his two well-known ballads, *The Vine-covered Hills*, and *Millions be free!* which were equally popular in France and the United Kingdom. But the great work by which Mr. Roscoe's fame was firmly established is his *Life of Lorenzo de Medici*, which was commenced in 1790, and appeared in 1796.

After the warm and universal approbation which followed the

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publication of his first historical work, Mr. Roscoe retired from his practice as a solicitor and entered himself at Gray's-inn, where he for some time pursued his studies, with the intention of ultimately practising at the Bar. Soon after was completed his *Life of Leo the Tenth*, which was published in 1805. In the same year Mr. Roscoe entered the firm of Clarke & Sons, Bankers, of Liverpool, and received a strong public testimonial to his merits in being returned member of Parliament for that town. His political career was brief, but during its continuance he distinguished himself as a steadfast advocate of the principles he had always professed, and as a warm partizan of the cause of Emancipation throughout the debate upon the African Slave Trade. After the dissolution of Parliament in 1807, Mr. Roscoe, distrusting the power of his friends to secure his re-election, declined entering upon a new contest, and from that time interfered with politics only by means of occassional pamphlets upon topics of general interest. The remainder of his life was devoted to the foundation and support of the many noble institutions which first called into existence through his instrumentality, reflect so much honor upon the town of which he was long an inhabitant. His attention was also occupied by the concerns of the extensive commercial establishment with which he was connected, and latterly by a consideration of the grand question of Criminal Jurisprudence. We understand that his correspondence upon this subject with various individuals in the United States has been productive of considerable improvements in the prisons of New York and Pennsylvania. Mr. Roscoe's latter days were subject to many difficulties, owing to the losses sustained by the firm under his management; and one instance of his disinterestedness (we allude to his honorable refusal to retain his library) must be fresh in the recollection of all. Yet, upon the whole, his life can neither be considered unhappy, nor his death, which occurred at the advanced age of eighty, premature. Distinguished through a long period of existence by the friendship of the gifted and noble, his days were spent in a free intercourse with kindred minds, amidst the comforts of a sufficient fortune and the enjoyment of a cultivated intellect.

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JULY.

Crown'd with a wreath of lilies, breathing cool
Their fragrance o'er his throbbing temples, comes
July, with languid step, and panting asks
The shade refreshful, and the dropping fount,
To cool his fever'd tongue, and lave his brow.

Bidlake.

The seventh month received its name, ***Julius***, in honour of Julius Cæsar, who was born on the twelfth day of it.

1, 1831. The Earl of Dundonald, ætat. 82.

The Right Honorable Archibald Cochrane, ninth Earl of Dundonald, Lord Cochrane of Paisley, Ochiltree, and Dundonald, and a Baronet of Nova Scotia, was born January 1, 1748-9, and succeeded to his family titles June 27, 1778. In early life he served in both the army and navy, but afterwards devoted himself entirely to scientific pursuits. Among his inventions are—a method of extracting tar, pitch, essential oils, volatile alkali, mineral acids, salts and cinders from pit-coal,—a method of preparing a substitute for gum-senegal, and other gums, extensively used in certain manufactures,—and a mode of preparing hemp and flax, so as materially to aid the operation of the tools called heckles, in the division of the fibre. He also published an *Account of the qualities and uses of Coal Tar and Coal Varnish. The present state of the manufacture of Salt explained, &c. Treatise on the Connexion between Agriculture and Chemistry.*

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In the Annual Address of the Registrars of the Literary Fund Society in the year 1823, appeared the following remarks in allusion to this nobleman:—"A man born in a high class of the old British peerage, has devoted his acute and investigating mind solely to the prosecution of science; and his powers have prevailed in the pursuit. The discoveries effected by his scientific research, with its direction altogether to utility, have been in many instances beneficial to the community, and in many have been the sources of wealth to individuals. To himself alone they have been unprofitable; for with a superior disdain, or (if you please) a culpable disregard of the goods of fortune, he has scattered around him the produce of his intellect with a lavish and wild hand. If we may use the consecrated words of an Apostle, 'though poor, he has made many rich,' and though in the immediate neighbourhood of wealth, he has been doomed to suffer, through a long series of laborious years, the severities of want. In his advanced age, he found an estimable woman, in poverty, it is true, like himself, but of an unspotted character and of a high though untitled family, to participate the calamity of his fortunes; and with her virtues and prudence, assisted by a small pension which she obtained from the benevolence of the Crown, she threw a gleam of light over the dark decline of his days. She was soon, however, torn from him by death; and, with an infant whom she bequeathed to him, he was abandoned to destitution and distress (for the pension was extinguished with her life). To this man, thus favored by nature, and thus persecuted by fortune, we have been happy to offer some little alleviation of his sorrows; and to prevent him from breathing his last under the oppressive sense of the ingratitude of his species."

His Lordship died at Paris, where he had lived some time on his scanty pittance.

2. Visitation of the Blessed Virgin Mary.

This festival was instituted by Pope Urban VI. to commemorate the visit of the Virgin Mary, to the mother of John the Baptist.

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4. Translation of St. Martin.

This day celebrates the removal of St. Martin's body to a more splendid tomb, by order of Perpetuus, his successor in the see of Tours. *(See November* 11.*)*

4. 1831. The Hon. James Monroe died, ætat. 72.

The late President of the United States, was born on Monroe's Creek in Virginia, in September, 1758; and descended from a respectable Scotch family. He served in the revolutionary war, and was afterwards in succession, Member of Congress, Governor of Virginia, Envoy Extraordinary to France and Great Britain, Secretary at War, and for eight years President of the United States. He alone, since Washington, was so elevated without opposition; and he was, without exception, the most popular chief magistrate the Americans have ever had. After having dispensed the patronage of the government for twice the constitutional term, he retired to the ranks of private life in honorable poverty; and having been induced, by broken health and domestic afflictions, to leave Virginia for New York, died in the bosom of a daughter's family in that city. It is very extraordinary that this is the third instance of a President of the United States dying on the anniversary of their independance,—the previous instances being Adams and Jefferson.

4, 1761. Samuel Richardson died.

While in the zenith of his popularity, and towards

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the close of his life, Richardson resided in the house here represented, at Parson's Green, near Fulham. It stood at the south-west corner, facing the road to London, and a few years since it was pulled down. The admirers of Grandison and Clarissa will view with interest this relict of an author whose admirers are always enthusiasts. Hence he dated many of his published letters, and here he entertained the most intellectual society of his time. Nothing could be more pleasant and cheerful than the site of the house—a pleasant green —handsome country houses, and a very cheerful road were always present from its windows—while the gardens behind were open and spacious.

7, 1831. Robert William Elliston died, ætat. 57.

This eminent comedian, the son of a watchmaker at Bloomsbury, was born the 7th of April, 1774. His uncle, the late Dr. Elliston, Master of Sidney Sussex College, Cambridge, is said to have intended him for the Church, and to have taken upon himself the care and expense of his education at St. Paul's School, where some declamations delivered with the unusual applause of his hearers, gave him the first encouragement to exhibit his theatrical abilities before a more extensive audience. His entrance upon his new career, however, drew upon him the serious displeasure of his friends, and he was compelled for some time to remain in the situation of a clerk in a lottery-office. His first appearance in public took place at Bath, in the character of Tressel in "Richard the Third." He was afterwards engaged by the well-known Tate Wilkinson, for the York Theatre, and subsequently, after having effected a reconciliation with his friends, returned to Bath, where he continued the reigning favourite, till June 1796, when he first appeared as a successful candidate for the favors of a London audience. Mr. Elliston's management of Drury-Lane involved

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him in many difficulties, from which he could never afterwards find the means of extricating himself. After some speculations in the Olympic Theatre, he undertook the superintendence of the Circus, and until very lately occasionally performed upon its boards. His death was occasioned by a fit of apoplexy.

8. Richard the Third Crowned.

[During the King's stay at Gloucester, he sent an express to Brackenbury, Governor of the Tower of London, to murder Edward V. and the Duke of York, his brother. Brackenbury, more conscientious than his master, returned a very submissive answer, but withal told him, he should never be able to execute his commands. Richard, vexed to be deceived in his opinion of that officer, sent him, by James Tyrrel, a written order, to deliver to the bearer the keys and the government of the Tower for one single night. Brackenbury obeyed, and Tyrrel brought in his agents to execute the King's orders. That very night, whilst all were asleep, he went into the Princes' room, and *smothering them in their bed*, caused them to be buried under a little staircase.—*Robertson's Rapin.*]

THE PRINCES OF YORK.

BY MRS. H. SIGOURNEY.

Rise, shade of Edward, from the tomb!
And shield thy sons from harm,
Protect them 'mid their prison gloom
From Gloster's murderous arm.

Still dost thou trust with dauntless eye,
A brother's proffer'd care?
Lo, Arthur's spirit hovers nigh,
And warns thee to beware.

They sleep—and charms so bright and pure
Around these features play,
Methinks the sacred force might lure
The savage from his prey.

Prince Edward's ruby lip was curl'd
As when, in knightly strife,
'Mid the proud tournay's list is hurl'd
The lance for death or life.

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But Richard in his dream did smile
Within that fatal tower,
As if he mark'd some pageant's wile
In lady's courtly bower.

His arm was o'er his brother's breast,
And on his pillow lay
That book of prayer their lips had prest,
Ere slumber's hallow'd sway.

Sad widow'd queen! once more to gaze
On brows so bold and fair,
Might paint a rainbow on thy days
Of weeping and despair.

Once more those sunny curls to lift
Might cheer a mother's heart,
But oh! the assassin's step is swift,
And dark the usurper's art.

Morn comes—those princes wake no more,
Their couch is lone and cold,
But yet no life-drops stain the floor,
To mark a deed untold.

Dissembler!—who dost mock the sky,
And man's weak search control,
Be strong to bear heaven's burning eye
Of justice on thy soul.

The sparkling orb may bind thy brow,
A realm extol thy bliss,
Ambition have its triumph now—
Is there no world but this?

It comes!—it comes!—the vengeful hour,
Stern warriors grasp the shield,
And Richmond pours his hostile power,
Oe'r Bosworth's fatal field.

Haste, haste, false king! their might oppose,
Uplift thine haughty crest,
But secret throngs of spectre foes,
Ungird thy tyrant breast.

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Meek Henry, from whose royal side,
Afresh the purple flows,
Seems with his slaughter'd son to glide,
Crush'd Lancaster's last rose.

Pale Clarence from his moulder'd well
Stalks forth with dripping hair,
And they who in their beauty fell,
Look to it!—they are there.

Go! to thy tearless grave, go down!
Thy blood in battle spilt;
Go! weigh against thy bauble crown,
The eternal pang of guilt!

13, 1831. JAMES NORTHCOTE, R.A. DIED, ÆTAT. 86.

One of the most eminent historical painters of the English school. He was born at Plymouth, where he followed his father's profession of watch-making until the period of manhood. He had always a taste for drawing, in which, however, he was discouraged by his father. The ingenious and scientific Dr. Mudge, perceiving the genius thus early displayed, was the means of introducing young Northcote, at the age of twenty-five, to Sir Joshua Reynolds; in whose house he remained five years on the most friendly terms; their taste in literature, as well as the fine arts, most agreeably mingling.

On leaving his preceptor's house he commenced portrait painter, and would have risen to most profitable eminence had he adhered to it, but fortunately for the character of the English school his ambition soared to a loftier height, and he resolved to devote himself to historical painting. In furtherance of this he visited Italy and remained there three years, during which he became a member of the Imperial Academy at Florence, of the Etruscan Academy at Cortona, and of the Academy dei Forti at Rome. In 1780 he left Italy for England, visiting all the collections of art in his way,

When he had again settled in London, Boydell employed him liberally, and in the formation of the Shakspeare Gallery

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Northcote's productions at once established his fame. Speaking of this period of his life a contemporary justly observes, "Among the many splendid efforts of British art which were then collected together, none were more justly attractive than his productions. The scene of the smothering the Royal children in the Tower of London; that of taking their bodies secretly by torch-light for interment at the foot of the stone steps; the subject of Arthur and Hubert; and others by his pencil, certainly may be reckoned among the best productions which the gallery contained." In 1790 he was elected a Royal Academician.

As an author he also holds a respectable rank. Among other works he published, *Memoirs of Sir Joshua Reynolds; One Hundred Fables, Original and Selected,* with 280 engravings from his own designs; *The Life of Titian;* and various papers in a periodical, called *The Artist.*

He was an economical man both in time and money, for although he was fond of gossiping he never paid, but only received visits, and these only such as did not interfere with his occupation, for he always worked and talked at the same time.

The late Mr. Hazlitt published a most amusing volume called, *Conversations of William Hazlitt with James Northcote.*

15. St. Swithin.

He was born at Winchester, of which place he became bishop in 852, and died in 863. He has been called the "weeping saint," from an old tradition, that if it rains on this day it will rain the forty succeeding ones.

18, 1831. Thomas Greatorex, F.R.S. F.L.S. died, ætat. 73.

An able musician and organist of Westminster Abbey. He was born in Derbyshire, and in 1772 came to London to study under Dr. Cooke, organist at the Abbey. In 1780 he was chosen organist at Carlisle cathedral, where, though his income was small, he often said he spent the happiest days of his life. For not being a mere musician, but a good mathe-

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matician and astronomer, he became acquainted with Dr. Percy, Bishop of Dromore, Dr. Law, Bishop of Elphin, and Archdeacon Paley; who, at that period, were all resident at Carlisle. In 1784 he went to Italy to study vocal music, and after an absence of four years returned to London, where his abilities procured him a respectable maintenance. In 1819 he succeeded to the situation of his old master, Dr. Cooke, in Westminster Abbey. He published a compilation of Psalm tunes and some other arrangements. His remains were interred in Westminster Abbey.

20. ST. MARGARET,

The daughter of a Pagan priest, and born at Antioch. Becoming a convert to Christianity, and refusing to abjure her new faith, she was beheaded in the year 278.

21, 1831. BARONESS DE LA MOTTE FOUQUE DIED.

Caroline de La Motte Fouqué was one of the most popular female writers of Germany. She expired in the arms of her husband, Baron Frederick de La Motte Fouqué, at her paternal estate near Rathenow. Among her other productions, *Roderick, die Frau des Falkenstein, Feodore,* her *Tales,* and *Letters on Female Education,* do great credit to the talent of this accomplished woman.

22. ST. MARY MAGDALEN.

This day was dedicated by Edward the sixth, to the memory of the penitent, Mary Magdalen, mentioned by St. Luke.

25. ST. JAMES,

The brother of St. John the Evangelist, born at Galilee, and by profession a fisherman. He was beheaded by order of Agrippa, in the year 43, for preaching and promoting the gospel.

26. ST. ANNE.

A festival in the Catholic church to the honour of the mother of the Virgin Mary.

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AUGUST.

O'er fields embrowned, lo! August slowly bends!
And yellow Plenty, smiling, gilds the lands.

The eighth month was named after Augustus Cæsar, in honour of his having obtained the consulate before the time usually prescribed, and having thrice subdued Egypt.

1. Lammas Day.

A festival in honour of St. Peter's imprisonment. Lammas, or loaf-mass, for an offering made by the Saxons of bread, with new wheat, indicative of the first fruits of harvest.

1. 1831. London Bridge Opened.

The ceremony of opening this splendid edifice, took place this day, and was attended by their Majesties, and many thousands of spectators. Such was the anxiety to obtain places on the bridge, that, it is said, £50 was offered and refused for a single ticket. A splendid tent for the accommodation and entertainment of the Royal party, was erected on the city side of the bridge, and adjoining tents for the bridge Committee, the Lord Mayor, Aldermen, Common Council, and numerous others. At three o'clock, their Majesties took water at Somerset

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House, and proceeded in the midst of a dense mass of boats, barges, and people; and on their arrival at the bridge, they were received by the Committee amid the firing of cannon, and the shouts of the populace. The whole presented a grand and enlivening appearance; the bridge was covered with banners, and the vessels with flags of all nations. To add to the scene, a balloon ascended in a grand style on the Southwark side. After partaking of a splendid entertainment the royal party re-embarked, much pleased with the ceremony.

The bridge was commenced on the 7th of May 1825, thus occupying seven years and three months in its erection. Upwards of 120,000 tons of stone were used in the construction, and more than 800 men employed daily upon it. The bridge consists of five beautifully formed elliptical arches, the centre one being 152 feet in span (the largest elliptical stone arch in existence), and 29 feet 6 inches in height. The other arches are 140, and 130 feet in span. The whole has a handsome and antique appearance. The approaches to the bridge, however, have been much censured, and certainly appear very awkwardly contrived for the neighbourhoods into which they lead.

The demolition of the old bridge, which it is evident was capable of standing many centuries, was commenced on the 21st of November, 1831.

6. Transfiguration of Our Lord.

A festival in commemoration of our Saviour's transfiguration, or his change of appearance, on the top of Mount Tabor.

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7. Name of Jesus.

The Holy Name of Jesus is a festival kept in the Romish Church on the second sunday after the Epiphany. In the reformed calendar it was removed to this day, but for what reason does not appear. In the ancient church the Name of Jesus was inscribed on the top of crosses erected on the highways by the means of initials, thus, I. H. S. *Jesus Hominum Salvator*, or I. N. R. I. *Jesus Nazarenus Rex Judæorum*, or I. H. C. *Jesus Humanitatis Consolator*. These crosses, with the name of Jesus thus affixed, were on the appointed day more devoutly reverenced than usual, every pious Christian making it a point not to omit his acknowledgment to the great author of his faith.

10. St. Lawrence,

A Spaniard, and treasurer of the church of Rome. Having distributed some of the church property to the poor, he was sentenced, by Valerian, to be broiled on a gridiron; which sentence he underwent in the year 258.

13, 1792. Queen Adelaide born.

Adelaide Amelia Louisa Teresa Caroline, sister to the reigning Duke of Saxe Meiningen, was married July 11, 1818, to his present Majesty.

15. Assumption of the Blessed Virgin Mary.

This day commemorates the assumption or ascension of the Virgin Mary into Heaven.

18, 1831. Archbishop Magee died, ætat. 66.

The Rev. William Magee, D. D., Archbishop of Dublin, Bishop of Glendalagh, and Primate of Ireland; Chancellor of the Order of St. Patrick, Visitor of Trinity College, Dublin, and M. R. I. A., was born of humble parents, and to his own

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exertions owed his advancement in life. In 1801 he published his well known *Discourses on the Scriptural Doctrines of the Atonement and Sacrifice*, the effect of which was his advancement in the church; in 1813 to the Deanery of Cork; in 1819 to the Bishopric of Raphoe; and in 1822 to the See of Dublin, by the late Lord Liverpool.

21, 1765. KING WILLIAM IV. BORN.

24. ST. BARTHOLOMEW,

Or rather Tholomew, or Tolmai. He was one of the apostles of Christ, and after spreading the Gospel through various barbarous countries, suffered martyrdom in Great Armenia.

27, 1830. COMTE LOUIS DE SEGUR DIED, ÆTAT. 77.

Louis, eldest son of the Marquis de Segur, was born at Paris in 1753. He served in the revolutionary war in America, and in 1786 was appointed Minister Plenipotentiary to the Court of St. Petersburgh; during his sojourn at which he accompanied the Empress Catherine in her celebrated journey to the Crimea. When the revolution broke out, in 1789, he returned to Paris and joined the royalists; and on the dethronement of the King, was arrested by the Committee of Public Safety. Being afterwards liberated, he left France, and having lost all his property, supported himself, his father, and family, by the productions of his pen; after the fall of Robespierre he returned to Paris, and voted for the consulship for life to Buonaparte, which he thought was the only way of consolidating the new institutions. After being elected a member of the National Institute, he became a Senator in 1813. On the restoration of Louis XVIII. he was made a peer of France, but on Buonaparte's return from Elba, having accepted a peerage from Napoleon, he was stripped of all his dignities on the final restoration in 1815. The remainder of his days were spent in retirement and literary pursuits.

Among his numerous productions are *The History of Modern*

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Europe ; Moral and Political Gallery ; Political Picture of Europe ; History of the Reign of Frederick William the Second ; Poetical Pieces ; and an *Ancient and Modern History for Youth, in* 38 *volumes.*

28. St. Augustine.

He was born of poor parents, at Tagosta, in Africa, in 354 ; and in early life led a dissolute course. Being converted in 386, he became a rigid devotee, and after serving as a priest for many years, was ordained bishop of Hippo in 395. He was founder of the oldest order of monks, and after many years of zealous devotion, he resigned this life in the year 430.

29. St. John the Baptist beheaded.

A festival in remembrance of the decolation of St John. *(See page* 71.*)*

31, 1688. John Bunyan died.

The justly celebrated Bunyan was born at Elstow, near Bedford, in the cottage here represented. His father was a tinker, but the son became pastor of a Baptist congregation at Bedford, which being condemned as an unlawful conventicle, by the infamous government of Charles II. the pastor was thrown into Bedford goal, and there kept for twelve years and a half, where he wrote his immortal *Pilgrim's Progress*, and other works.

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SEPTEMBER.

September's morn and eve are chill,
Reminding us that Time rolls on.
Bernard Barton.

The ninth month received its name in the time of Numa Pompilius from *Septem*, seven, and *imber*, rain, it being at that period the seventh month.

1. St. Giles,

The tutelar saint of Edinburgh, a native of Athens, who gave his property to charitable uses, and then retired to a cell on the banks of the Rhone, where he became a hermit. He was afterwards made abbot of the Abbey at Nismes. He died in the year 750.

2. 1666. London burnt.

On the 6th of December, 1830, the following motion was put and carried in the Court of Common Council: —"That the Committee of City Lands, be instructed to cause to be removed from the inscription on the monument, the words, "*Sed furor Papisticus qui tam patrivat nondum restinguitar*;" and also the inscription, "This pillar was set up in perpetual remembrance of the most dreadful burning of this Protestant city, begun and carried on by the treachery and malice of the Popish

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faction, in the beginning of September, in the year of our Lord 1666, in order to the effecting their horrid plot for the extirpating the Protestant religion, and English liberties, and to introduce Popery and slavery?"

On this, a correspondent in the *Gentleman's Magazine*, very justly remarks,—"After this ebullition of intolerance had existed for 150 years, at a period when its charges were neither believed by Protestants, nor regarded by Catholics, the Court of Common Council, in a fit of affected liberality, passed the resolution, which is above extracted, and that too without any complaint from the injured party, and the decree has been since carried into execution. However we may regret the existence of the feelings which gave rise to the inscriptions, it is difficult to see the wisdom which led to their removal, in a period when the sting was removed, and they were only regarded as a vestige of past intolerance, and fanatical credulity; and if all monuments of a like description were to be destroyed, with as little discrimination, alas, for our antiquities! One inscription might show a bad spirit, another might be an evidence of ignorance: the first proved that our forefathers, in some cases, were bigoted and persecuting; the second, that the march of intellect was at a stand still,—destroy them, therefore, without mercy! Perish all recollections of blindness, and ignorance. If this assembly had the government of Rome, I greatly fear we should see them directing the demolition of the arch of Titus, because it might give offence to the Jews."

2, 1830. N. T. CARRINGTON DIED, ÆTAT. 53.

This pleasing poet was born at Plymouth in the year 1777. His father, who held a situation in the Arsenal, got him bound apprentice, at the age of fifteen, to a measurer in the Dock-

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yard. On which event the the following observations, written by the poet in a small memorandum book, were found after his decease. "I was totally unfit, however, for the profession. Mild and meek by nature, fond of literary pursuits, and inordinately attached to reading, it is strange that a mechanical profession should have been chosen for me. It was principally, however, my own fault. My father was attached to the Dock-yard, and wished to see me in it; and as the popular prejudice in those days among the boys of the town was in favor of the business of a shipwright. I was carried away by the prevailing mania, and was accordingly bound apprentice. This, however, had scarcely been done when I repented; and too late found that I had embraced a calling foreign to my inclination. Dissatisfaction followed, and the noise and bustle of a Dock-yard were but ill suited to a mind predisposed to reflection and the quietest and most gentle pursuits."

His occupation growing more isksome he resolved on running away at the expiration of about four years, and in a moment of desperation entered on board a ship-of-war. He was in the action off Cape Finistere, February 14, 1797, and his first verses on record were in commemoration of that event. These attracted the notice of his captain, who, perceiving that he deserved a better situation, gave him his liberty and sent him to his native town. Here he opened a school, for which profession he proved himself fully competent, although his education had never extended beyond reading, writing, arithmetic, and grammar; his own indefatigable reading had supplied him with every other requisite for the responsible situation. About the year 1805 he went to Maidstone and opened an academy, but at the expiration of three years he was induced to return to Plymouth-Dock, and resume his academical avocation, at the entreaty of numerous inhabitants who wished to place their sons under him.

Although he frequently published little fugitive poems of great beauty, it was not till 1820 that his first volume, *The Banks of Tamar*, appeared. The disadvantages under which this was produced cannot be better expressed than in the author's own words prefixed to the poem:—

"The severity of criticism may be softened by the intimation

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that the MSS. of this volume passed from the author to his printer without having been inspected by any literary friend. Other circumstances, very unfavorable to literary composition, have attended this work. In the celebrated tale of 'Old Mortality' Mr. Pattieson, the village teacher, after describing, with admirable fidelity, his anxious and distressing labours during the day, observes, 'The reader may have some conception of the relief which a solitary walk, in the cool of a fine summer evening, affords to the head which has ached and the nerves which have been shattered for so many hours in plying the task of public instruction. My chief haunt, in these hours of golden leisure, is the banks of the small stream which, winding through a long vale of green bracken, passes in front of the village school-house.' But the teacher of Gandercleugh possessed advantages which never fell to the lot of the writer of this work. Engaged, like that far-famed personage, in the education of youth, his labours have seldom been relinquished till the close of our longest summer evenings, when, instead of retiring to the banks of a beautiful stream, he has almost uniformly been driven by business connected with his arduous profession, or by literary cares, to his solitary study at home. There, depressed by the previous fatigues of the day, he has occasionally indulged in composition; and hence this volume, the production of many a pensive abstracted hour."

In 1826 appeared *Dartmoor*, a descriptive poem, which at once stamped his reputation, and of which a second edition was printed about two months after the appearance of the first. In 1827 he was attacked by incipient consumption, and too clearly showed that the disease was a fatal one; still, however, he continued his schoolastic duties till March, 1830, when his frame had become so much weakened that in July he removed to Bath, where his son was editor of the Bath Chronicle; and here he remained till the period of his decease. He left a widow and six children dependant on his eldest son for support.

During his last illness he published *My Native Village*, a poem of great beauty, in which he feelingly and prophetically pictured his own sufferings:—

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" His wanderings and his musings, hopes, and fears,
His keen-felt pleasures and his heart wrung tears,
Are past;—the grave closed on him ere those days
Had come, when on the scalp the snow-wreath plays,
He perish'd ere his prime; but they who know
What 'tis to battle with a world of woe,
From youth to elder manhood, feel too well
That grief at last within the deepest cell
Of the poor heart, will bring decay, and shake
So fierce the soul, that care like age will make
' The grasshopper a burden.' Slowly came
The mortal stroke, but to the end the flame
Of poesy burnt on. With feeble hand
He touch'd his harp, but not at his command
Came now the ancient music. Faintly fell
On his pained ear the strains he lov'd so well,
And then his heart was broken!"

7. St. Eunerchus,

Or Evurtius, a bishop of Orleans about the year 375. Very little is known of his history.

8. Nativity of the Virgin Mary.

A festival appointed by Pope Servius, about the year 695, in celebration of the birth of the Blessed Virgin.

8, 1831. King William IV. and Queen Adelaide Crowned.

This may be regarded as a remarkable day. The Jews consider it as the first day of creation. It is the end of the Feast of Tabernacles, appointed by Moses, and is considered as the first day of the year 5592. As the first day of the Jewish year—the Feast of Trumpets—it was, of course, kept as a solemn festival by His Majesty's Israelitish subjects, in conjunction with the ceremonial honours due to the coronation. The Roman Catholics keep this day in

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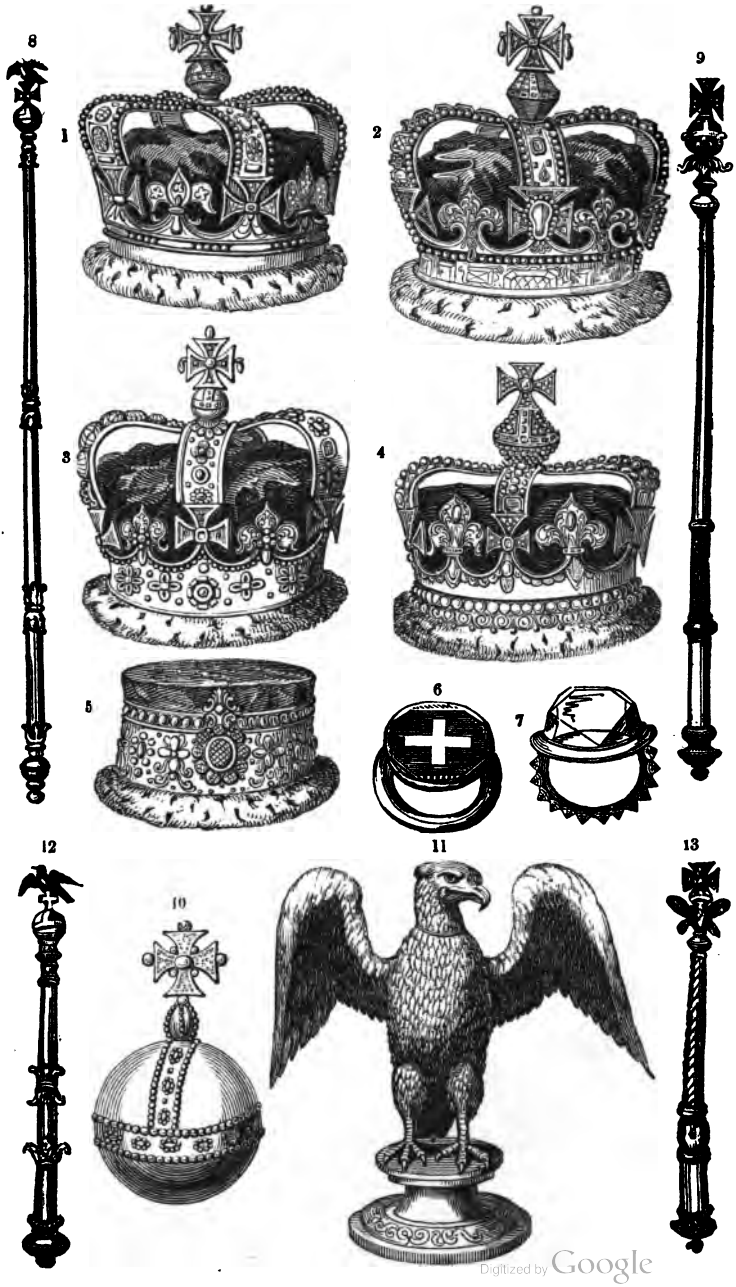

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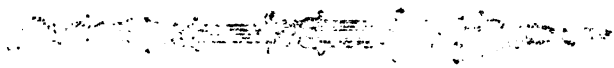
[illegible] the nativity of the Virgin [illegible] celebrated in the year 695. It was also on the [illegible] the year 1087, that [illegible] the conqueror [illegible] the injury of which he died.

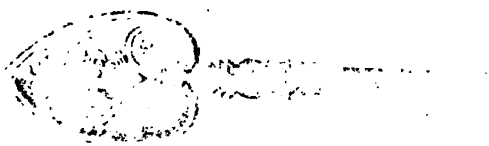
CORONATION MEDAL.

[illegible] the Royal Mint, and distributed [illegible]

The [illegible] print represents the [illegible] Coronations of English Monarchs.—1. King Edward's [illegible]. 2. Crown of State. 3, 4. Queen's Crowns. 5. Queen's Circlet. 6. King's Ring. 7. Queen's Ring. 8. [illegible] Rod. 9. Queen's Sceptre. 10. [illegible] 11. Ampulla or Golden Eagle containing the [illegible] Sceptres. 12. King Edward's Sword.



[illegible] The Anointing [illegible]



11. Holy Cross.

A [illegible] instituted by the Roman Church [illegible] year 615, to commemorate the recovery by the [illegible]

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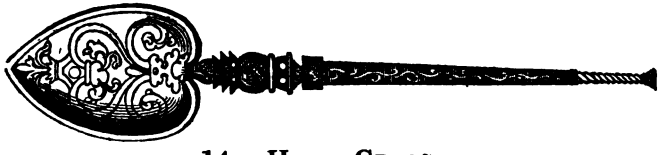
honour of the nativity of the Virgin Mary, a festival first celebrated in the year 695. It was also on this day, in the year 1087, that William the Conqueror received the injury of which he died.

CORONATION MEDAL,

Struck at the Royal Mint, and distributed at the Coronation in Westminster Abbey.

The accompanying print represents the following Regalia used at the Coronations of English Monarchs:—1. King Edward's Crown. 2. Crown of State. 3, 4. Queen's Crowns. 5. Queen's Circlet. 6. King's Ring. 7. Queen's Ring. 8. Queen's Rod. 9. Queen's Sceptre. 10. The Orb. 11. Ampulla, or Golden Eagle, containing the Anointing Oil. 12, 13. King's Sceptres. 14. King Edward's Staff.

15. The Anointing Spoon.



14. Holy Cross.

A festival instituted by the Romish Church in the year 615, to commemorate the recovery, by the Emperor

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Heraclius, of the cross on which our Saviour suffered, and which had been taken away during the plunder of Jerusalem by Cosroes, King of Persia.

It was formerly called Holy Rood Day.

17. ST. LAMBERT,

A Bishop of Maestrecht, who was killed during some public disturbances in France in the year 709. His festival was first ordained to be kept in the year 1240.

21. ST. MATTHEW.

The Apostle and Evangelist, who was slain at Madabar, in Ethiopia, about the year 60. This festival was first instituted in the year 1240.

26. ST. CYPRIAN.

He was born at Carthage, of which place he became bishop in the year 248. During the persecutions of Dioclesian, he was apprehended, with St. Justina, for publicly persevering in their faith; and, being condemned, they were both taken to the banks of the river Gallus, near Nicomedia, and beheaded.

29. ST. MICHAEL.

A festival instituted in the year 487, in honour of the archangel and all his attendant angels.

30. ST. JEROME,

The most learned and eminent biblical scholar of the fourth century; born at Stridon about the year 331. Whilst living in a monastery, at Bethlehem, he translated the Old Testament into Latin, which version is now called the Vulgate, and the only one allowed to be be used by the Romish church. It was the first book ever printed. He died at or near Bethlehem in the year 420.

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OCTOBER.

Hail, lovely season of the changing year!
What varied beauties clothe the mellow scene
Beneath October's reign.

FOWLING, *a Poem.*

The tenth month, originally the eighth in the Romulean Calandar, derived its name from *Octo*, eight, and *Imber*. After receiving several other names from the Romans, it eventually returned to its original one, which it still retains.

1. ST. REMIGIUS,

Or St. Remy, the apostle of France, was born at Laudon in that country, and he became bishop of Rheims, in the year 460. He converted and baptised King Clovis, the first Christian monarch of France, and died in the year 533.

6. ST. FAITH,

Or Fides, a young lady of great beauty at Agen, in Aquitain, who, refusing to sacrifice to the idols, was beheaded with many other Christians, by order of Dacian, in the year 290.

9. ST. DENY'S,

Or Dionysuis, the Areopagite, and patron saint of France, was bishop of Athens, where he suffered martyrdom for his faith in 272.

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13. Translation of King Edward the Confessor,

The youngest son of King Etheldred, who succeeded to the crown of England in 1042. He greatly improved the laws, and condition of the country, and built the splendid Abbey at Westminster; in which he was the first person buried. Pope Alexander III. canonized him in the year 1265.

17. St. Etheldreda,

The daughter of Annas, prince of the East Angles, born about the year 630. She made a vow to live in perpetual continency, which, although persuaded to marry, she strictly adhered to. After the death of her husband, she retired into the monastery of Caldingham, beyond Berwick, in 672. The year following, she founded a church and monastery in the Isle of Ely, where she died in the year 679.

18. St. Luke the Evangelist,

A native of Antioch, and by profession a physician. Of all the inspired writers, his works are written in the most elegant language. He died at the age of eighty-four, in the year 63.

18, 1216. King John died.

One of the worst acts of this imbecile monarch, was his conduct towards his nephew, Prince Arthur, whom he caused, through jealousy, to be confined in the new town at Rouen. Whilst here it is said the King intended to have the Prince's eyes put out, and also rendered incapable of having children. In these cruel purposes, however, he was frustrated by those who were to be his agents. However, a few days after this, the

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Painted by J. Northcote. Engraved by Henry Cook.

Hubert and Prince Arthur.

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[illegible] disapp[illegible]
[illegible] what [illegible]
[illegible] John's reign, has [illegible]
[illegible] **ressive scenes:**

[illegible] O, save me Hubert
[illegible] with the fierce looks
Hubert. Give me the iron, [illegible]
[illegible] Alas, what need you [illegible]
I will not struggle,—I will [illegible]
For heaven's sake, Hubert, [illegible]
Nay, hear me, Hubert, drive th[illegible]
And I will sit as quiet as a [illegible]
I will not stir, nor wince, nor [illegible]
Nor look upon the iron angrily:
Thrust [illegible] men away, and I'll [illegible]
Whatever torment you do put me to.
Hubert. Go stand within, let me alone with [illegible]

[illegible]

[illegible] year 1203, Philip of France, [illegible] King [illegible] as a French peer, to answer [illegible] of [illegible] Arthur, and sent over to England [illegible] his demands. But as it was not [illegible] a national object to the [illegible] English knight was produced [illegible] his country. This was J[illegible] [illegible] conquered the kingdom [illegible] [illegible] demanded [illegible] When he was brought out, [illegible] [illegible] if he would [illegible] for [illegible] country [illegible] [illegible] Co[illegible] to have [illegible] [illegible] to [illegible] [illegible] at a blow [illegible]

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young Prince disappeared on a sudden, and it was never discovered what his fate had been. This incident, in King John's reign, has furnished one of Shakspeare's most impressive scenes:

Arthur. O, save me Hubert, save me! my eyes are out,
Even with the fierce looks of these bloody men.
Hubert. Give me the iron, I say, and bind him here,
Arthur. Alas, what need you be so boisterous-rough?
I will not struggle,—I will stand stone-still.
For heaven's sake, Hubert, let me not be bound,
Nay, hear me, Hubert, drive these men away,
And I will sit as quiet as a lamb;
I will not stir, nor wince, nor speak a word,
Nor look upon the iron angrily:
Thrust but these men away, and I'll forgive you,
Whatever torment you do put me to.
Hubert. Go, stand within; let me alone with him.
Act IV. Scene I.

In the year 1203, Philip of France, summoned King John, as a French peer, to answer for the death of Prince Arthur, and sent over to England a champion to enforce his demands. But as it was not judged right to submit a national object to the decision of a combat, yet an English knight was produced to defend the honour of his country. This was John de Courcy, who, after having conquered the kingdom of Ulster, in 1177, had been treacherously detained on suspicion of treason. When he was brought out, emaciated with confinement, John asked him if he would fight for him? "No, not for you! but for my country's honour, I will fight to my death," replied de Courcy. The French champion is said to have declined the combat; and de Courcy being desired to shew his prowess in the presence of John and Philip, cleft a helmet at a blow, and buried his sword

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so deep in the post which supported it, that none but himself could draw it out. For these exploits, the de Courcys are still privileged to be covered before the King. It is added, that being asked why he looked so fiercely around him before he made the blow, he replied, "that had he failed to cleave the helm, he meant to have slain all the spectators, lest they should deride him."

25. St. Crispin.

This saint, and his brother Crispinian, were born at Rome, and travelled to Soissons, in France, about the year 304, to propagate Christianity. To maintain their independence, they supported themselves by shoemaking, but the governor of the town discovering their adherence to the Christian faith, ordered them to be beheaded about the year 308.

28. St. Simon and St. Jude.

St. Simon, the Canaanite, suffered martyrdom on the cross with the greatest patience, after much suffering.

St. Jude, the son of Joseph, and brother to St. James the Less, was a zealous propagator of the gospel, and was put to death at Berylus, for disproving the superstition of the Magi.

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NOVEMBER.

Again I come to view the scene,
Whose summer hues I well remember;
'Tis stripped of pride, 'tis shorn of green,
Beneath the rude sway of November.

Delta.

The eleventh month, originally the ninth, derived its name from *Novem*, nine, and *Imber*. Commodus changed the name to *Exuperatorious*, but this alteration died with the tyrant.

1. ALL SAINTS.

A festival appointed by Pope Boniface IV. to celebrate all those saints who have not particular days appointed to them in the calendar.

The eve of this day is called Hallow-e'en, and many superstitious practices are still prevalent on it; particularly in Scotland.

2. ALL SOULS.

This day was appointed by Odilon, abbot of Cluny, in the fourth century, in commemoration of the faithful departed, and for a general prayer for those souls who are detained in purgatory.

3, 1777. PRINCESS SOPHIA BORN.

The youngest sister of his present Majesty.

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5, 1605. Powder Plot.

This day commemorates the discovering the conspiracy to blow up the Parliament House. Mr. Hardiman, in his *Irish Minstrelsy*, says:—"That this was a Protestant, and not a Popish plot, few well informed persons of the present day entertain the slightest doubt. From a careful inspection of *all the original documents* connected with this dark transaction, preserved in the State Paper Office, London, and without reference to any other source, or circumstance whatever, I do declare it to be my solemn conviction, that the entire was planned and conducted, from beginning to end by Cecil, Secretary of State to James I. I do not intend here to enter into the particulars which led me to this conclusion, nor, indeed, is this the place for so doing. One only document, therefore, I shall notice, and that is the official report drawn up by Levinus Moncke, and throughout corrected by his master the Secretary, in his own hand-writing.* When perusing this elaborate statement, it appeared to me, that certain passages could not have been expunged, or particular interlined amendments made by Cecil, if he had not been well acquainted with the plot, before the delivery of the letter to Lord Monteagle."

6. St. Leonard.

A French nobleman, of the Court of Clovis I., who

"* Another paper, in the hand-writing of the King, (directing certain queries to be put to John Johnson, alias Guy Fawkes) deserves attention, as a curious record of the cruelty and pedantry of that weak and worthless monarch. It thus concludes; "If he will not otherwise confess, the gentler tortures are to be first applied unto him, et sic, per gradus, ad ima tenditur. And so God speed your good work!" *From the Orig. MS.*

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was converted to Christianity by St. Remigius, and afterwards became bishop of Limosin. He died about the year 559.

8, 1768. PRINCESS AUGUSTA SOPHIA BORN.

The eldest sister of his present Majesty.

8, 1674. JOHN MILTON DIED, ÆTAT. 66.

The above is a correct view of Elwood the Quaker's house at Chalfont, in Buckinghamshire, to which the immortal poet retired during the plague in London. "It was on a visit to this place," says Elwood, "that after some common discourses had passed between us, Milton called for a MS. of his, which, being brought, he delivered to me, bidding me take it home with me, and read it at my leisure: and when I had so done, return it to him with my judgment thereupon. When I came home, and set myself to read it, I found that it was that excellent poem, which is entitled *Paradise Lost*." Thus it appears that *Paradise Lost* was completed in 1665.

10. ST. MARTIN'S EVE.

The Abbée de Berlot, in his *History of the Knights of Malta*, says,—that the King of Hungary, before he

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left Palestine, bathed himself and all his troops in the river Jordan on St. Martin's Eve; a religious ceremony used out of devotion by pilgrims when they were not hindered by the Turks and Saracens.

11. ST. MARTIN,

A native of Hungary who was bred to the army, but afterwards became bishop of Tours. He was distinguished for his piety and meekness, and died in 397. Davila, in his celebrated *History of the Civil Wars of France*, mentions that St. Martin was considered by the French as one of the saintly protectors of the crown of France.

13. ST. BRITIUS,

Or Brice, the successor of St. Martin in the see of Tours, died in the year 444.

14, 1830. HENRY BELL DIED.

He was the practical introducer of steam navigation into Europe, having, on the 2nd of August, 1812, launched the first steam-vessel, called the Comet, on the Clyde. The number of steam-vessels now plying on the river exceed sixty. Mr. Bell, who had been for some time reduced to dependence upon charity, died at Helensburgh, near Greenock, after a long and severe illness.

17. ST. HUGH, BISHOP OF LINCOLN.

He was born in Burgundy in the year 1140, and in 1186 succeeded to the bishopric of Lincoln. Such was his zeal, humility, and activity, that it is said he carried many of the stones and mortar to the workmen employed in building his splendid cathedral. He died in the year 1200.

20. EDMUND, KING AND MARTYR,

The last titular king of East Anglia, who being taken prisoner by the Danes was by them basely

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murdered, in the year 870, because he would not renounce his religion.

22. ST. CECILIA,

A Roman lady, who converted her husband and brother to Christianity, for which they all suffered martyrdom in the year 230; Cecilia by being thrown into boiling water. St. Cecilia is always considered the patroness of music.

23. ST. CLEMENT,

A Roman, converted to Christianity by St. Peter, and afterwards the successor of St. Cletus in the apostolical chair of Rome. He died about the year 100.

25. ST. CATHERINE,

A lady of Alexandria, who suffered martyrdom, for not abjuring her religion, in the year 305. She is said to have been tortured on wheels turning rapidly, having nails, knives, &c. on their rims.

29, 1830. JAMES HUMPHRIES DIED.

He was born in Montgomeryshire, and brought up to the profession of the law. At an early age he was entered at Lincoln's Inn, and became a pupil of Mr. Butler, author of *Reminiscences*, &c. He afterwards practiced as a conveyancer on his own account; and was a man of unquestionable talent. His *Observations on the Law of Real Property* is a work which will ever remain a proud memorial of his extensive knowledge and original and liberal views.

30. ST. ANDREW,

The Apostle, was a fisherman at Bethsaida, the son of James, and younger brother of Simon Peter. Whilst propogating the Gospel he endeavoured to convert the pro-consul Egeus, at Patræ, which so incensed the governor, that he ordered him to be scourged and then crucified.

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DECEMBER.

Welcome December's cheerful night,
When the taper-lights appear;
When the piled hearth blazes bright,
And those we love are circled there.
Mrs. Radcliffe.

The last month derived its name from *Decem*, ten, and *Imber*; it being the tenth month of the Romulean calendar.

2. Advent Sunday.

This always falls on the fourth Sunday before Christmas, and commemorates the Advent, or Hithercoming of our Lord.

6. St. Nicolas,

The tutelar saint of school-boys and fishermen, was born at Patara, in Lycia. He became bishop of Myra, in Lycia, and after an exemplary life of piety, died about the year 343.

8. Conception of the Virgin Mary.

A festival instituted by Anselm, Archbishop of Canterbury, in honour of the miraculous conception of the Virgin; on this day William the Conqueror's fleet came safe to shore after encountering a severe storm.

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8, 1830. BENJAMIN CONSTANT DIED, ÆTAT. 63.

This distinguished writer and statesman was born at Geneva, on the confines of France, in 1767. His father, a General in the Dutch service, returned to his native country on the close of his military career. At the commencement of the Revolution, young Constant went to Paris, and in 1796, appeared at the bar of the Council of Five Hundred, demanding the rights of a French citizen, as the descendant of French ancestors exiled by the revocation of the edict of Nantes. About this period he published several political tracts, which attracted much notice. On the forming of the Tribune he became a member of that body, in which he performed a conspicuous part: In 1802, however, he was comprehended in Buonaparte's first purification of that assembly. He was afterwards ordered, with Madame de Stael, to quite Paris in consequence of their opposition to some of Buonaparte's measures. After travelling through various countries, and making a long stay at Gottingen, he returned to Paris in 1814.

Constant's opposition to Buonaparte being only against points in which he considered the liberty of the people concerned, the Emperor, on his return from Elba, took him again into favour, and made him a Councellor of State. On the restoration of Louis XVIII., he was, therefore, again compelled to withdraw, and come over to England. In November 1816 he was again enabled to visit Paris, and in 1818 was elected in the Chamber of Deputies, where he continued and shone as one of its brightest luminaries.

His constitution had been gradually decaying for more than two years, and he became daily more attenuated. He had several times been seen in the Chamber to be overcome with sleep, and twice fainted. He seemed to have had a presentiment of his dissolution from the last words he uttered in the Tribune.—"Permit me," said he, "to implore your indulgence, not for my principles, but for the imperfections of a reputation drawn with haste. Naturally weak, and in bad health, I feel a sadness I cannot overcome: this sadness, gentlemen, it is not in my power to explain. I cannot account for it, but have endeavoured to surmount these obstacles in the discharge of

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my duty, and my intention, at least, is worthy your indulgence." His funeral, in the Pere la Chaise, was attended by the most eminent of all classes in Paris, who moved amid a congregated mass of upwards of 200,000 persons. Several orations were delivered over the grave, the first of which was by General Lafayette.

The memory of this eminent statesman, orator, and patriot, will be immortal. His attachment to freedom was ardent and sincere. That noble object was always his; and neither the seductions of power, or of fortune, nor the perils he had to encounter in its defence, ever induced him to relinquish it. His whole life was a struggle against all the principles and interests that are averse to the people. Writer, deputy, citizen, he attacked, during thirty years, despotism in every shape, and did more than any other man in France to crush it. The storms of the Tribune had peculiar charms for him, and he loved the animating excitement of Parliamentary contests. Never was orator more ingenious; never was a keener or more resistless logic displayed in the Senate. He laboured most indefatigably, and the extent of his works, chiefly political, if collected, would be prodigious.

13. St. Lucy,

A lady of Syracuse, who, refusing to abjure her vow of celibacy, and marry a young nobleman, was by her rejected lover accused of Christianity before the heathen judge, and condemned to death in the year 304. She, however, died in prison before the execution of her sentence.

17, 1830. Simon Bolivar died.

This distinguished man was born at Caraccas about the year 1785; and, being descended from a family of distinction, at the age of fourteen he was allowed—a permission then granted to few—to visit Spain for the purpose of concluding his studies. He subsequently travelled through France, Italy, and England; and, as he had early resolved on liberating his country, he paid

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particular attention to every thing relating to politics and the military art. In 1809 he returned to his native country, just at the moment when the flag of independence was unfurled; but, as he disapproved of the course pursued by the Congress of Venezuela, he took no part in public affairs until subsequent to the earthquake, when he hastened to the assistance of Miranda, and obtained the governorship of Puerto Cabello, with the rank of Colonel.

On the restoration of the Spanish authority in Venezuela, nothing was dreamed of but to inspire terror and to inflict punishment, but these measures recoiled upon the tyrants; the earthquake was forgotten, and the people flew to arms to repel that inhuman oppression which left them no hope except what is founded in resistance.

From this period Bolivar's life was a continued series of active service in the cause of his country's liberty, and after undergoing many vicissitudes, he at length became President of Colombia, and took the oaths on the 1st of October, 1821. In his speech on accepting the presidency he said:—"I am the son of war, the man whom battles have raised to the magistracy. Fortune has sustained me in this rank, and victory has confirmed it. But these titles are not those which are consecrated by justice, by the welfare and wishes of the nation. The sword which has governed Colombia is not the balance of Astrea—it is the scourge of the Genius of Evil, which sometimes Heaven permits to descend to the earth for the punishment of tyrants and the admonition of the people. The sword will be of no use on the day of peace, and that shall be the last of my power, because that I have sworn it within myself—because there can be no republic when the people are not secure in the exercise of their own powers. A man like me is a dangerous citizen in a popular government—is a direct menace to the national sovereignty. I wish to become a citizen, in order to be free, and that all may be so too. I prefer the title of Citizen to that of Liberator, because this emanates from war—that from the laws. Exchange, sir, all my honours for that of a good citizen."

The Spanish authority was soon after this completely annihilated, and the independence of Colombia acknowledged

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both by the United States and Great Britain. Though it is to be apprehended that permanent tranquillity, for many reasons, is not to be expected for some time in South America, there is a confident assurance that the dominion of Spain is gone for ever.

When the independence of his country had been established, Bolivar set out for Peru, to aid the cause of man in that province, where his military talents were again crowned with victory, and where he established the same independence that he had obtained for Colombia.

This illustrious Liberator of Colombia and Peru expired at San Pedro, near Santa Martha, on the 17th December, 1830, of an illness brought on by years of fatigue and exertion in the cause of liberty, aggravated, we fear, by a too great sensitiveness under the attacks of illiberal politicians, by whom he was constantly assailed, and who were unable to appreciate the many excellent qualities of the promoter of South American freedom. His Excellency met the announcement of his fate with calmness and resignation—received the sacrament, and conformed to all the rites prescribed by his religion, and on the 11th of December performed the last act of his public life, by dictating and signing a patriotic address to the Colombian nation. He afterwards became delirious, in which state, with occasional lucid intervals, he remained until one o'clock on the 17th, when he expired without a groan. All his expressions evinced the utmost anxiety for his country and his horror of anarchy; and his most frequent exclamation was, "Union, union! or the hydra of discord will destroy us."

To his honor it must be recorded, that not even in his delirium, after having been apprised of his danger, did a single word of anger against his persecutors and enemies escape him, although he was well aware that he had been brought by them chiefly to an untimely end.

In examining Bolivar's character let us endeavour to divest it, on the one hand, of the mist which his enemies would cast around it, and on the other of that halo of exaggerated praise which may be readily forgiven to his admirers. As a man, we shall find him heroic and noble minded; liberal in his sentiments, and warm in his affections, unwavering to his friends, and placable to his foes. As a patriot, he was pure and disin-

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terested; and even his love of fame was cherished in subserviency to the good of his country. Of his disinterestedness, there exists a proof of so remarkable a nature, that it is scarcely to be paralleled in history. Notwithstanding his having, for a long period, possessed unlimited control over the revenues of the three countries, Colombia, Peru, and Bolivia, the Liberator died without possessing a single shilling of the public money; and also without debts, although he had sacrificed nine-tenths of a splendid patrimony in promoting the service of his country, and in liberating nearly 1000 slaves.

The diamond crosses, and other magnificent decorations, which had been presented to him by the different states and towns in Peru and Bolivia are, by his order, to be restored to the donors as memorials of his affection.

21. St. Thomas,

By birth a Jew, and supposed to have been a Galilean. He travelled in the eastern countries, promulgating Christianity, and effected numerous conversions, which so much incensed the Brahmins, that they instigated the people against the saint, who threw stones and darts at him, through which he died.

21. Shortest Day.

This day in London is 7 hrs. 44 min. 17 sec.; allowing 9 min. 5 sec. for refraction.

25. Christmas Day.

CHRISTMAS CAROL.

BY L. E. LANDON.

"Ivy, holly, and misletoe,
Give me a penny before I go."

"Christmas comes but once a year."

The rose, it is the love of June,
The violet that of spring;
But on the faithless and fading flowers
That take the south wind's wing!
Such craven blooms I hold in scorn—
The holly's the wreath for a Christmas morn.

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Its berries are red as a maiden's lip,
Its leaves are of changeless green;
And any thing changeless now, I wis,
Is somewhat rare to be seen.
The holly which fall and frost has borne,
The holly's the wreath for a Christmas morn.

Its edges are set in keen array,
They are fairy weapons bared;
And in an unlucky world like ours
'Tis as well to be prepared.
Like the crest of a warrior worn,
The holly's the wreath for a Christmas morn.

It was so with England's olden race,—
But, alas! in this our day
We think so much of the present time,
That we cast the past away.
Let us do as they did ere we were born,—
The holly's the wreath for a Christmas morn.

The holly it is no green-house plant,
But grows in the common air;
In the peasant's lattice, the castle hall,
Its green leaves alike are there.
If its lesson in mind be borne,
The holly's the wreath for a Christmas morn.

Christmas is the greatest festival of the year, being the celebration of the birth of our Saviour, and has always been kept with much solemnity, festivity, and rejoicing.

The custom of Christmas-boxes took its origin from the following circumstance:—"Whenever a ship sailed from any of those ports where the religious profession was under the authority of Rome, a certain saint was always named, under whose protection its safety was committed, and in that ship there was a box, and into that box every poor person put something in order to

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induce the priests to pray to that saint for the safe return of the vessel; which box was locked up by the priests, who said the money should not be taken out until the vessel came back."—*Book of Curiosities.*

The custom of annual donations at Christimas, and on New Year's Day, is very ancient, being copied by the Christians from the Polytheists of Rome, at the time the public religion was changed.

Innumerable ceremonies and customs have, in all ages and in all countries, prevailed at this season. Waldron, in his *History of the Isle of Man*, says:—"On the 24th of December, towards evening, all the servants in general have a holiday; they go to hunt the wren, and after having found one of these poor birds they kill her, and lay her on a bier with the utmost solemnity, bringing her to the parish church and burying her with a whimsical kind of solemnity, singing dirges over her in the manx language, which they call her knell; after which Christimas begins. There is not a barn unoccupied the whole twelve days, every parish hiring fiddlers at the public charge; and all the youth, nay, sometimes people well advanced in years, making no scruple to be among these nocturnal dancers."

26. St. Stephen,

The first deacon appointed by the Apostles to manage the public funds, for the relief of the poor. Having charged the Jews with the murder of Jesus Christ, they were so enraged that they stoned him to death in the year 33.

26, 1830. Thomas Carpenter died, ætat. 59.

This eminent naturalist and cultivator of science died at Tottenham, where he had some time resided. His researches

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and discoveries in the economy and instinctive operations of insects, and microscopic animalculæ, were original, extensive, and curious; many of the latter were but the ten millionth part of an inch, yet all in life and animated motion. He improved the method of illuminating the minutest opaque objects by candle-light, under the compound microscope; and published many of his observations and discoveries, in the latter volumes of Gill's Techniological Repository.

27. ST. JOHN THE EVANGELIST. *(See page 63.)*

28. INNOCENTS.

This is sometimes called *Childermass Day*, and was first instituted to commemorate the cruel massacre of the children by order of Herod, as mentioned by St. Matthew.

31. ST. SILVESTER,

A bishop of Rome, who succeeded to the honour in the year 314. He died in the year 334.

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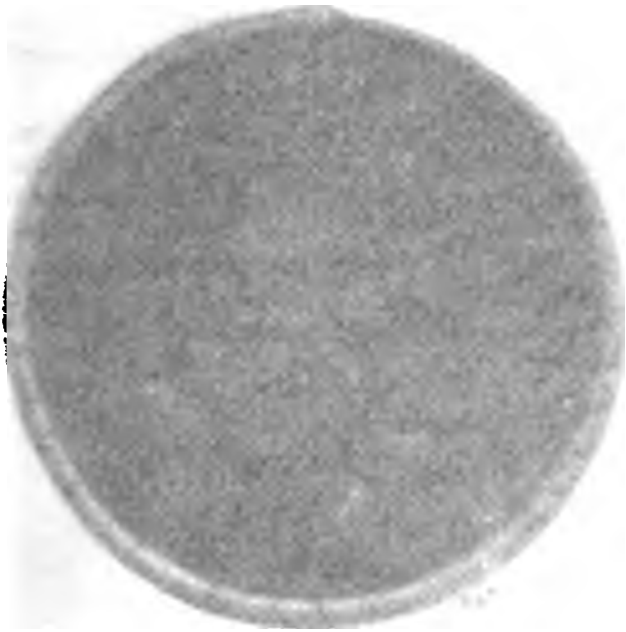

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ASTRONOMICAL OCCURRENCES.

Systems of Suns.

Where ends this mighty building? where begin
The suburbs of Creation? where the wall
Whose battlements look over into the vale
Of non-existence? Nothing's strange above!
Say, at what point of Space Jehovah dropp'd
His slackened line, and laid his balance by;
Weighed worlds, and measured infinite no more.'

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INTRODUCTION.

Thou who didst put to flight
Primeval silence, when the morning stars
Exulting, shouted o'er the rising ball;
O Thou! whose word from solid darkness struck
That spark the sun, strike wisdom from my soul;
My soul which flies to Thee, her trust, her treasure.

WHATEVER is vast in magnitude, extensive in duration, distant in situation, rapid in motion, and regular in succession, belongs to the sublime science of astronomy. The sun,—how stupendous its bulk, how glorious its appearance, and how splendid its retinue! to this magnificent body, not only our earth turns, but numerous other revolving globes, to receive motion, light, heat, fertility, and other unceasing energies; without which, perpetual sterility, ceaseless desolation, and eternal night, would reign over every planet, that now circulates around the sun as its golden centre; the streams which issue from its orb, revive every living thing, give colour to the rose, and beauty to the landscape. After riding in brightness through the vault of heaven, this glorious luminary disappears, and dispenses to other regions its benignant influences; the moon, then, rising in cloudless majesty, unveils her silvery splendour, and as her soft

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beams are reflected from tower, rock, and rolling ocean, gently tinging the forest foliage, and the fertile valley, the mind is filled with indescribable emotions at the silent solemnity of the scene, so that if only these two luminaries had been revealed to the eye of man, and all the vast orbs of immensity hidden from his knowledge and view, there would be sufficient proof of the power, the goodness, and the majesty, of that Being, who gave "the sun to rule the day, and the moon to rule the night."

In whatever direction the eye is turned, there are objects in the heavens to satisfy the curiosity of the lover of variety, and excite the admiration and wonder of the devout student of the sublime science of astronomy; the rapidly changing spots on the solar disc; the bold mountain scenery of the moon; the hasty visits of Mercury to our morning and evening twilight, shining like a living jewel on the verge of the rosy dawn, or the dewy eve; the ever varying phases of Venus; the gibbous form of Mars; the miniature system of Jupiter, exemplifying on a small scale, and in brief portions of time, those phenomena, which require ages for developement in the larger bodies of the system; the magnificent rings and retinue of Saturn, and the anomalous system of Uranus; comets from the regions of space traverse the planetary orbits, wheel round the sun, and disappear: some throwing their brilliant trains across the heavens, and others stealing with feeble beams through the starry sky, on their mysterious destination. Beyond those regions, visited by the most excursive of these erratic bodies, the fixed stars invite the attention, and bewilder the eye, with the infinite variety of their combinations,

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colours, brightness, and the immensity of their numbers. Still more remote, dimly shine forth those mysterious mist-like forms, (nebulæ,) the subjects of a higher astronomy, beyond which science fails to penetrate, and abandons the most vigorous mind to the illimitable exercise of imagination.

A slight reference has been made to *magnitude*, which is, however, but a relative term; the pearl that adorns the diadem, is large when compared with the sparkling dew-drop; a miniature representation of the terrestrial sphere, is small when compared with the sailing globe, which conveys the bold aëronaut on his adventurous voyage. To acquire a correct idea of magnitude, we must ascend some elevation, from whence a prospect might be obtained of an uninterrupted horizon; here would be displayed an extent of view, stretching forty miles in every direction, forming a circle, eighty miles in diameter, consequently, one hundred and fifty in circumference, and an area of five thousand square miles; this, then, would be one of the largest objects that the eye could grasp at one time; but large as it is, it would require forty thousand such prospects to constitute the whole surface of the earth; but this is comparatively nothing, for one of those glittering points which ornament the celestial canopy, (Jupiter,) is fourteen thousand times larger than the earth, and the sun 1,384,480 times larger than our terrestrial globe! Here, then, the imagination begins to be overpowered at any early step of the comparison, for there are, it is probable, an hundred million of such bodies as the sun within the scope of modern instruments, each individual of which may be as vast as our solar orb; and if all of these were congre-

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gated into one mass, it would probably be but as nothing, when compared with the material creation that lies beyond the reach of human research.

Intimately connected with the idea of magnitude, is that of space,—space, the theatre of astronomical science. When the midnight sky is refined by frost, the deep azure canopy is seen to be thronged with glittering points, which we call stars; it is admitted that these are at an immense distance; for were we to travel in the direction towards which they lie, they would not increase their apparent magnitude, which is the case with those objects which we approach on the earth's surface; the diameter of the earth, therefore, is too small a scale with which to measure their distances; the diameter of the earth's orbit also fails in accomplishing the desired object; this amazing length of line (190 millions of miles) fails to increase or diminish their visual angle, or alter their relative positions to each other. Without availing ourselves of every step which reason and science afford, it will be readily admitted, that space lies far beyond where the faintest star-beam may be supposed to indicate the verge of creation; to aid, however, the contemplation, the nature of extension may be considered—mere extension; the distance of two bodies from each other; the path along which a body moves; but, the path described by a moving body in a right line, has only length, space has also breadth and thickness, which latter may be called a solid space; keeping the mind intent on the figure thus supposed, let it be conceived, if possible, of an infinite extension in the three dimensions: of the infinite flowing of a *line* each way; an infinite extension of a *superficies*; an infinite radia-

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tion of a *cube*; but the mind falters in attempting to fathom this profound abyss. Let there be described the largest circle that imagination can conceive, and a tangent be drawn to this vast circle, and extended till the powers of the mind languish. Do we approximate a boundary? that which bounds, must itself be bounded, and thought invigorated may renew the task; but millions and millions of years may the swiftest wing urge on its vigorous unwearied flight in one direction; it may ascend, descend, and describe a course, making all possible angles with its previous directions, and still be as distant from a boundary as at the first. Two bodies might travel millions of ages with exceeding velocity towards each other, and in the same right line, and never meet. Words and numbers fail, or we might call in the aid of the ages that have rolled on to the present moment, and those which the vast ocean of futurity contains, and assist the ideal flight, with the swiftness of sun-beams or of seraphs, but no human fancy can summons up an adequate conception to rove through this mighty abyss, where above, beneath, around, all is interminable ocean, shoreless, bottomless:

> At once it quite ingulfs all human thought;
> 'Tis comprehension's absolute defeat!

This wondrous space is replenished with rolling orbs of diversified forms, magnitudes, and constitutions. Is it not more easy to conceive that these glorious bodies are infinite in their number, and interminably dispersed over the fields of space, than that they are placed in a void, which bounds the amplitude of creation? Let it, however, be supposed, that there is a termination, and that a circle can be described and generated which

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would include the whole of material existence; and that this spherical universe is as vast as the imagination can grasp, by either numbers or geometry; let the rein of fancy be given to the most vigorous mind in calculating the sum total of these suns, firmaments of suns, systems of systems of suns; let the toil of computation be renewed year after year, with the aid of the whole human race, and a continuation of the task be left as a legacy to posterity, to estimate the grand amount. In this imaginary calculation of the suns of the universe, it should be borne in mind that all are arranged in clusters; and that each cluster is as distant from each other in the same proportion, as two individual stars in a cluster may be from one another. The system of fixed stars to which our sun belongs is the Via Lactea; the extent of which is at least nine hundred times the distance of the nearest fixed star from our central orb; so distant is the extreme boundary of our cluster or nebula, that the light of a star, placed at its farthest verge, though it travel with the velocity of twelve millions of miles every minute, would take up three thousand years to reach the earth! the telescope has discovered thousands of these clusters of stars; from those that are distinctly seen and of considerable extent, to those that are barely visible under the most favourable circumstances of atmosphere, and with the most powerful instruments. In estimating the number contained in this limited universe, when ages had rolled over ages, it is evident a boundary would be approximated, for on the principle that matter is not infinitely extended, the task of numeration would at length be terminated, even though in an *eternity of time*, if the phrase may be admitted; numbers could be

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applied to denote the aggregate. On the conclusion of the task, this stupendous fact would be evident, that this spherical universe of suns and systems, limited in number, would bear no proportion to the vast void which would surround it; a void, compared with which, the fair fields of creation would be an atom, and from some distant point of space, the whole of the vast assemblage would sink into the dim twinkling of a solitary star! *(See Frontispiece to the Astronomical Occurrences.)*

But there is a consideration connected with this subject which renders it probable that matter is infinitely extended; for were the universe limited, the surrounding void would have no action on the bodies it environed; these would then exert all their gravitating force on each other; those systems on the confines of creation would be less acted upon in one direction than another, without any attractive influence to keep them in their position. In the other direction, these exterior systems would be most powerfully acted upon by the interior, which action would ultimately draw them towards the centre with accelerated velocity, till the whole would ultimately rush together, and form one immense mass of matter! But when we admit that suns, and systems of suns, are continued without end, we see a counterbalance of this action, an equilibrium preserved, and the mind seems to be relieved from a species of horror.

> If 'tis an error, 'tis an error sprung
> From noble root, high thought of the Most High.
> But wherefore error? who can prove it such?
> He that can set Omnipotence abound.
> Can man conceive beyond what GOD can do?
> Nothing, but quite impossible, is hard.
> He summons into being, with like ease,

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A whole creation, and a single grain.
Speaks he the word? a thousand worlds are born!
A thousand worlds! there's space for millions more!
And in what space can his great fiat fail?
Darts not his glory a still brighter ray
The less is left to Chaos?

These bodies, vast in magnitude, infinite in number, and the tenants of space are in rapid motion; but what imagination can possibly conceive of that power, which impels the movement! An idea may be acquired of this rapid motion by a reference to familiar objects,—the velocity of a ship impelled by the wind, particularly if urged over the rolling billows by a furious tempest; the swiftness of a bird winging its flight through the air, especially if pursued by an eagle; the motion of a ball projected from a cannon, which, in some cases, is at the rate of 800 miles in an hour. But these are creeping things,—Saturn, one of the most tardy in its course of any of the planets,—a globe 900 times larger than the earth, is impelled at the rate of 22,000 miles in an hour, carrying with him a system of stupendous rings, and seven moons larger than the earth's satellite. Jupiter, whose vast circumference would comprise within it, a thousand such globes as the one we inhabit, moves at the rate of 29,000 miles in an hour. This earth is urged forward at the rate of 68,000 miles in an hour, and Mercury still faster, being 107,000 miles in the same time; but even these motions are slow, when compared with that of the comet of 1680, which went half round the sun in ten hours and a half, and its tail, (at least an hundred millions of miles in length) turning round in the same time, keeping nearly in the direction opposite to the sun; the velocity of this comet, at this

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part of its orbit, (its perihelion) was 880,000 miles in an hour, and so closely did it approach the sun, that supposing the centrifugal or projectile force to have been annihilated at this point of its course, it would have fallen into the sun in less than three minutes!

In the sphere of the fixed stars, there is reason to believe that bodies are in motion, whose velocities are proportionably greater than any in the planetary system. One of the double stars completes its revolution in fifty-seven years; in estimating the orbit described by a lesser sun about a greater, it will not be necessary to suppose (though probably it is the case) that the two bodies are as remote from each other as the nearest fixed star is from our sun,—namely, twenty billions of miles; were it even admitted, that the line of separation between them was only a twentieth part of this distance, the revolving star would then move at the rate of 12,000,000 miles in an hour! This motion, observed among many of the fixed stars, confirms the belief, that our sun, with its bright retinue of comets, planets and satellites, is moving forwards through space, with a velocity past conjecture; it is therefore probable that the solar system will never, in the course of its most protracted duration, ever revisit any part of the same curve or line it has moved over since the creation!

Spirit alone can distance the career,
Orb above orb ascending, without end!
Circle in circle, without end, enclosed!
Wheel within wheel, Ezekiel, like to thine!
Like thine, it seems a vision or a dream;
Though seen, we labour to believe it true!
What involution! what extent! what swarms
Of worlds, that laugh at earth! immensely great!
Immensely distant from each other's spheres!

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This then is the scene, and these are the objects, amongst which we are again to expatiate; which deserve the profound attention of every individual who professes to admire the works of the Great Creator,—He who sits enthroned in glory unapproachable, sustaining all the vast orbs which his hands have made, ruling over each as the Governor, supplying the necessities of all, as the bountiful Benefactor, and wherever intelligence is implanted in these vast realms of material existence, leaving not himself without witness that he is at once the sole source of life and felicity :—

A Sovereign which o'er all things rolls his eye,
Extends his wing, promulgates his commands,
But, above all, diffuses endless good;
To whom for sure redress, the wrong'd may fly,
The vile for mercy, and the pained for peace;
By whom the various tenants of these spheres,
Diversified in fortunes, place, and powers,
Raised in enjoyment, as in worth they rise,
Arrive at length (if worthy such approach)
At that blessed fountain-head from which they stream.

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JANUARY.

Obliquity of the Ecliptic.

The magnitudes of this angle at several epochs during the present year are exhibited in the following

TABLE.

January	1st,	the true obliquity is..	23°	27′	34″.6
April	1st,	.....	23	27	35 .9
July	1st,	.....	23	27	35 .6
October	1st,	.....	23	27	37 .0
December	31st,	.....	23	27	36 .9
January	1st,	the mean obliquity is	23	27	41 .7

The lunar equations of the equinoctial points at the same times are as follow; namely,

January	1st,	the equation is	—	12″.9
April	1st,	.....	—	13 .9
July	1st,	.....	—	14 .8
October	1st,	.....	—	15 .6
December	31st,	.....	—	16 .3

The sun enters Aquarius at 29 min. after 11 of the night of the 20th of this month.

LUNAR PHENOMENA.

Phases of the Moon.

New Moon,	3rd	day at 12 min. after	3 morning.
First Quarter,	10th	..... 50	midnight.
Full Moon,	17th	..... 53	3 afternoon.
Last Quarter,	24th	..... 3	5

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Conjunctions of the Moon with the Planets and Stars.

January	4th,	with Mercury,	at 8 morning.
	5th,	.... Uranus	6 evening.
	6th,	.... Jupiter.....	3 afternoon.
	20th,	.... Saturn	10 night.
	26th,	.... γ in Libra ..	6 morning.
	28th,	.... Venus	midnight.
	29th,	.... Mars.....	4 morning.
	30th,	.... Mercury	4 afternoon.

PHENOMENA PLANETARUM.

Mercury will be stationary on the 1st of this month. 5th day perihelion. Inferior conjunction at 30 min. after 6 of the evening of the 10th. Greatest north latitude on the 15th. Stationary near ξ in Sagittarius on the 21st.

Venus will attain her greatest north latitude on the 9th.

Phases of Venus.

The proportions of the bright and dark phases of this planet are as follow:

January 1st.—Illuminated part = 6.8125
Dark part = 5.1875

Mars in his descending node on the 3rd. In conjunction with B in Ophiuchus at 5 in the morning of the 19th.

The Asteroids.

		Hrs.	Min.			
Vesta,	1st day. Right Ascension	9	4.	N. Declin.	20°	10′
	9th	8	59.	.....	21	3
	17th	8	52.	.....	22	0
	25th	8	44.	.....	22	58
Juno,	1st	10	36.	S. Declin.	0	57
	9th	10	36.	.....	0	47
	17th	10	34.	.....	0	21
	25th	10	31.	N. Declin.	0	20

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		Hrs.	Min.			
Pallas	1st	20	41.	S. Declin.	1°	48′
	9th	20	51.	.....	1	45
	17th	21	2.	.....	1	37
	25th	21	12.	.....	1	24
Ceres,	1st	22	5.	.....	21	2
	9th	22	16.	.....	19	54
	17th	22	27.	.....	18	43
	25th	22	38.	.....	17	31

Vesta on the 9th in conjunction with ξ in Cancer, the asteroid one and a half degree south of the star. In opposition on the 25th between γ and ξ in Cancer, and four degrees north-east of Præsepe, a beautiful cluster of stars; this small planet may be known by its pure white light, unattended with any nebulosity; it shines with a brilliancy equal to that of a star of the sixth magnitude, and in favorable positions, may be seen without the assistance of a telescope.

The elements of the orbit of Vesta, and other particulars, are as follow:—

It performs its sidereal revolution in 1325.7431 mean solar days: and its mean synodical revolution in 503.41 days.

Its mean longitude, at mean noon, at Greenwich, on January 1st, 1820, was in 278° 30′ 0″.4.

Its mean motion in its orbit, in a mean solar day, is 16′ 17″.9516: its mean motion in 365 days is consequently 99° 9′ 15″.33.

The longitude of its perihelion, on January 1st, 1820, was in 249° 33′ 24″.4, with an apparent annual motion of + 1′ 34″.24.

Its orbit is inclined to the plane of the ecliptic, in an angle of 7° 8′ 9″, with an annual decrease of 0″.12.

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Its ascending node was on January 1st, 1820, in 103° 13′ 18″.2, with an apparent annual motion of + 15″.63.

The eccentricity of its orbit is 0.089130; half the major axis being considered as unity: subject to an annual increase of .000004009.

The greatest equation of the centre is 10° 13′ 22″. Its mean distance from the sun is 2.367870; that of the earth being unity; the distance in miles 224,778,755. Its mean diameter in miles 238.

Proportional quantity of light and heat, the earth being unity .17835.

Jupiter in conjunction with μ in Capricornus on the 5th, difference of latitude 14′.

Eclipses of the Satellites of Jupiter.

EMERSIONS.

First satellite, 15th day at 49 min. 39 sec. after 5 evening.
Third satellite, 21st ..... 40 .... 43 5

FORM OF SATURN'S RING.

January 1st.—Semi-transverse axis —— 43″.17
Semi-conjugate axis —— 2 .05

Uranus between ♑ and ι in Capricornus on the 1st day.

Sphere of the Fixed Stars.

Survey of the principal stars on the 1st of the month, at 8 in the evening.

Perseus in the Zenith. A line drawn from Algol in the head of Medusa, through γ in the Hyades, will pass through Rigel in the foot of Orion. The Pleiädes, Hyades, and belt of Orion, are in the same right line. Capella in Auriga, and β in Taurus point to ζ in Orion. A line connecting Aldebaran in Taurus, and Sirius in

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Canis major, will pass near, and parallel to, the three stars that form the belt of Orion. Rigel, the middle star in the belt, and Betelgeux, in the shoulder of Orion, are in the same right line. The Pleiädes, and β in Taurus, point out Pollux in Gemini. A line drawn through the middle star in the belt of Orion, and Procyon in Canis minor, will pass through Regulus in Leo. Procyon, and Castor in Gemini, point to the north pole of the heavens. Sirius and Procyon are nearly equally distant from Betelgeux; these three stars nearly form an equilateral triangle. Aldebaran is the summit of an isosceles triangle, of which Procyon and Sirius form the base. When Menkar in the head of Cetus, and Algol, are on the meridian south of the pole, the stars in the head of Boötes are passing the meridian below the pole. Mirach and Almaak, in Andromeda, are in the same line with κ in Perseus. A right line will nearly connect γ in Perseus, δ and ε in Cassiopeia, with Deneb, γ and β in Cygnus. Markab, Scheat, and Algenib, in Pegasus, and Alpheratz, the star in the head of Andromeda, form a quadrangle, usually denominated by seamen the square of Pegasus. Alpheratz and Algenib are nearly in the equinoctial colure. The northern star in the belt of Orion is in the equinoctial. β in Taurus, and Bellatrix, the star in the left shoulder of Orion, pass the meridian together. When Delphinus is setting, Regulus is rising. As Lyra approaches the northern horizon, Sirius appears in the south-east. The principal stars in Cygnus are arranged in the form of a cross,—κ the summit, and β the foot; γ, δ, ε, form the arms; in this month it appears erect above the horizon in the N.W. by W.

The following stars will serve as a measure for esti-

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mating the distance of celestial objects from each other: the stars in the belt of Orion are one and a half degree separated from each other. The distance between Castor and Pollux is three and a half degrees. The distance of Bellatrix and Betelgeux (the stars in the shoulders of Orion) is eight degrees. The middle star in the belt of Orion, and Betelgeux, are ten degrees apart.

TELESCOPIC OBJECTS.

Aries. In this zodiacal constellation β, γ, ε, λ, 14, 33, and 41, are double stars. π is a triple star; the stars of which it is composed are arranged in a line; the largest star is white, the other two are mere points. In Triangulum (an asterism above Aries) κ, ε and ι are double: β is larger than κ, and is supposed to have changed its magnitude. Near Triangulum is Musca, in which the star numbered 39 is double.

Cetus. In this constellation, γ, ε, ν, 26, 61, 68, and 94, are double stars: above ζ is a nebula, and another near δ. Mira is a variable star; period of variation, 331 dys. 10 hrs. 19 min.: at its maximum brightness it is of the second magnitude; its light gradually diminishes till it disappears. χ also disappears periodically: at its greatest brilliancy it seems of the fifth magnitude. κ in Cetus has probably changed its magnitude: it is now less bright than β.

Andromeda. In the right foot of Andromeda is a collection of nebulous stars. 14 is a round, bright, well-defined, planetary disc, 15″ in diameter. γ is a double double star, and one of the most beautiful objects in the heavens—the larger star is red, the smallest of a sky-blue color. Near β is a nebula. β, μ, and ν,

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point very nearly to the large nebula in the girdle of Andromeda,—its position is a little to the west of ν; there are smaller nebulæ near it.

Perseus. ζ is a beautiful triple star. Near 21 is a double star—the large star yellow, the small blue. The clusters of stars near χ, is one of the most splendid telescopic views in the heavens—when the atmosphere is very pure, it suggests the idea of a hemisphere of stars. In this constellation there are no fewer than eight nebulæ. Algol is a variable star; period of variation, 2 days, 20 hrs. 48 min. 58″.7, at its maximum brightness, it is of the second magnitude, its minimum of the fourth.

THE STAR OF BETHLEHEM.

Then thy fair star, Benevolence, that shed
Its radiance o'er Messiah's lowly bed,
Formed and commissioned by its purpose high,
Sprung from the bosom of infinity;
Paid its descended Lord the homage due,
And veiled its flaming forehead, and withdrew.
Perchance, its mission done, retraced its course,
Merged in the depths of light's eternal source;
Perchance, reserved, when at the Judge's seat
Time and Eternity again shall meet,
In milder glory o'er his path to burst,
And grace his second advent as the first;
Ordained to temper with benignant glow,
The frown of Justice on that awful brow,
And tell the ransomed bondsmen of the tomb,
Of Love that saved them from a darker gloom;
Perchance, in sight of heaven's adoring powers,
To blaze for ever o'er its topmost towers,
(Where floats the standard of the cross unfurled,)
The badge and trophy of a rescued world.

" *The Pleasures of Benevolence* "

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A Table of the Transits of the Moon and Planets.

These transits are inserted according to astronomical time,—the day being supposed to begin at noon, or twelve hours later than the civil day, and is continued through the twenty-four hours, or to the succeeding noon, when the next day begins. Thus in the following table, the moon transits the meridian, first day, 23 hrs. 29 min. astronomical time, which corresponds with 29 min. after 11 of the morning of the second day, according to civil reckoning. From noon to midnight, the day of the month and the hour of the day are the same in both methods, from midnight to noon they differ.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

JANUARY.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination South.	Equation of time added to apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Sunday	8 5	3 55	18 44	23 4	3 34
7th Saturday ..	8 1	3 59	19 10	22 28	6 20
13th Friday	7 55	4 5	19 36	21 35	8 48
19th Thursday ..	7 47	4 13	20 2	20 28	10 52
25th Wednesday.	7 39	4 21	20 27	19 7	12 31

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	23 29	1 11	20 45	21 37	2 56	16 21	2 17
7th.	3 24	0 30	20 46	21 29	2 35	15 54	1 52
13th.	8 15	23 23	20 47	21 21	2 14	15 28	1 27
19th.	14 15	22 40	20 50	21 14	1 53	15 1	1 2
25th.	18 57	22 20	20 55	21 7	1 34	14 35	0 37

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FEBRUARY.

SOLAR PHENOMENA.

Full ample the dominions of the Sun!
Full glorious to behold! how far, how wide,
The matchless monarch from his flaming throne,
Lavish of lustre, throws his beams about him,
Farther and farther than a thought can fly,
And feeds his planets with eternal fires!

SOLAR ECLIPSE.

The sun will be eclipsed on the 1st of this month, but invisible to the British Isles. The ecliptic conjunction will occur at 15¾ min. after 10 at night; the eclipse will be central on the meridian at 10 hrs. 17 min. in longitude 154° 14½′ west, and in latitude 15° 14¼′ south. The eclipse will be visible from the Isthmus of Panama to the eastern parts of New Holland. At Mexico nearly nine digits, and at Paramatta four digits of the sun's disc will be obscured.

The Mexicans attribute a solar eclipse to the arts of magicians, who by their enchantments, pluck the bright luminary from its radiant course; they strictly observe a fast, and their women cut themselves with knives, and disfigure their persons. Others of them imagine that the sun and moon have wounded each other in a battle between them.

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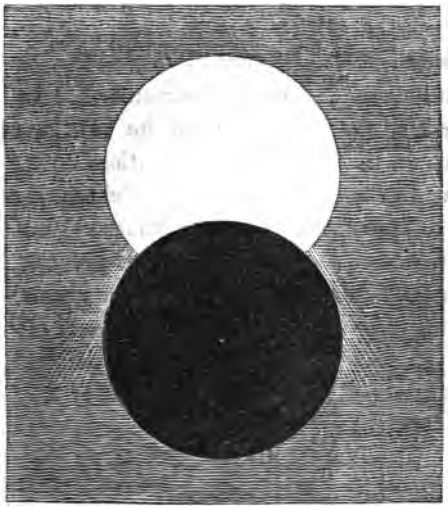
A very unusual appearance was observed in the solar eclipse of 16th June, 1825, by Captain Beechey, and is thus detailed in his voyage to the Pacific and Beering's Straits:—"It consisted of a luminous haze about the moon, as if the light had been transmitted through an intervening atmosphere. "I made," writes Captain Beechey, "a sketch of it very soon afterwards, of which I was very glad, as a similar phenomenon I found had been observed by Dollond in another eclipse; and as the subject has since received much interest from the circumstance of Aldebaran, and Jupiter and his satellites, having been projected upon the disc of the moon."

The following is a copy of the sketch referred to:



About the time of the greatest obscuration, Leslie's photometer stood at 27°; exactly half of what it afterwards showed. Between the intervals of observation,

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we amused ourselves with making experiments with a burning glass, upon differently colored cloths, in imitation of those recorded in the Memoirs of the Astronomical Society; and which will convey to the general reader a more intelligible idea of the decrease of intensity in the sun's rays at the time of the greatest obscuration, than the observations with the photometer, as well as of the readiness with which some colors ignite in comparison with others; for instance—

Black, burned instantly. Blue required 3″.7.
Scarlet, 15″.7. Pea-green would not ignite.

After the eclipse, and when the sun was shining bright—

Black, burned instantly. Blue, instantly.
Scarlet, 2″. Pea-green, 7″.8.
Yellow, 4″.3. (*See T. T. Ast. Occ. August*, 1831.)

The results are the mean of several observations; and the intervals, the time between the rays being brought to a focus on the cloth, and its ignition.

During the solar eclipse of last February, (*See T. T. Ast. Occ. February*, 1831,) in those regions of North America, where the obscuration was greatest, the thermometer fell rapidly, and the weather became so cold, that water thrown up into the air, froze almost immediately; several stars were distinctly visible.

The sun enters Pisces at 5 min. after 2 of the afternoon of the 19th.

LUNAR PHENOMENA.

Phases of the Moon.

New Moon,	1st day	at 16 min.	after 10	night.
First Quarter,	9th	13	11	morning
Full Moon,	16th	19	3	
Last Quarter,	23rd	22	noon.	

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Conjunctions of the Moon with the Planets and Stars.

February	3rd, with Jupiter,	at 9 morning.
	8th, ... μ in Cetus,	.. 6 evening.
	10th, ... Aldebaran,	.. 5 afternoon.
	16th, ... Regulus,	.. 4 morning.
	17th, ... Saturn,	.. 6
	28th, ... Venus,	.. 8
	29th, ... Uranus,	.. 1 afternoon.
	30th, .. . Mercury,	.. 8 morning.

Five of these conjunctions will prove occultations, namely, with μ in Cetus, Aldebaran, Regulus, Venus and Mercury; the moon will approach very near to Saturn and Uranus.

PHENOMENA PLANETARUM.

Mercury, at his greatest elongation on the 3rd of this month as a morning star, angle of elongation 25° 26′. In his descending node on the 8th. Aphelion on the 18th. In conjunction with Uranus on the 24th, and with σ in Capricornus on the 27th, difference of latitude 3′.

Venus in conjunction with Mars at 4 in the morning of the 2nd; with 14 in Sagittarius on the same day, difference of latitude 11′; with π in the same constellation at 9 in the evening of the 13th, difference of latitude 13′; with 1 and 2 o in Capricornus on the 29th, differences of latitude 3′ and 6′.

Phases of Venus.

The proportions of the bright and dark phases of this planet are as follow:—

February 1st.—Illuminated part = 8.3041
Dark part..... = 3.6959

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Mars in conjunction with 718 Mayer on the 2nd, difference of latitude 7′; with 740 Mayer on the 10th, difference of latitude 9′.

The Asteroids.

			Hrs.	Min.			
Vesta,	2nd day.	Right Ascension,	8	35.	N. Declin.	23°	52′
	14th	.....	8	24.	.....	24	59
	26th	.....	8	15.	.....	25	44
Juno,	2nd	.....	10	26.	.....	1	16
	14th	.....	10	16.	.....	3	1
	22nd	.....	10	10.	.....	4	21
	29th	....	10	4.	.....	5	32
Pallas,	2nd	.....	21	23.	S. Declin.	1	7
	14th	.....	21	38.	.....	0	33
	26th	.....	21	54.	N. Declin.	0	8
Ceres,	2nd	.....	22	50.	S. Declin.	16	17
	14th	.....	23	7.	.....	14	25
	26th	.....	23	24.	.....	12	30

Juno in opposition on the 22nd, and in its most favorable position for observation. It may be traced in its course through Sextans Uraniæ, a small constellation south of Leo,—on the 4th it may be seen between the stars numbered 30 and 31; on the 15th it will pass close to a small star, situated between 23 and 31; on the 22nd in conjunction with 23, the asteroid a degree north of the star; on the 28th, north of, and very near to, two small nebulæ. This small planet may be known by its reddish color: it varies considerably in its brilliancy, but in general it shines as a star of the first magnitude.

The elements and other phenomena of Juno are as follow:—

Sidereal revolution, 4 years, 132 days, 15 hrs. 51′ 33″.12.
Place of perihelion, 53° 33′ 46″.
Inclination of the orbit, 13° 4′ 9″.7.

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Ascending node, 171° 7′ 40″.4.
Mean longitude, 200° 16′ 19″.1.
Mean motion in a mean solar day, 13′ 32″.9304.
Mean distance from the sun, that of the earth being considered as unity, 2.669009.
Mean distance from the sun in miles, 253,365,480.
Eccentricity of the orbit, half the major axis, being considered as unity, 0.257848.

The eccentricity of Juno is rather more than 65 millions of miles, being one-fourth of her mean distance from the sun; she consequently takes twice the time in describing that part of her orbit, which is farthest from the sun, than she does in passing through the remainder.

The greatest equation of the centre is 29° 46′ 19″. Apparent mean diameter 3″, and true diameter 1425 miles.

Jupiter in conjunction with the sun at 30 min. after 2 of the afternoon of the 24th.

Eclipses of the Satellites.

Jupiter is too near the sun to admit of any of these eclipses being visible.

FORM OF SATURN'S RING.

February 10th.—Semi-transverse axis —— 43″.45.
Semi-conjugate axis —— 2 .94.

Uranus in conjunction with the sun at 45 min. after 5 of the morning of the 4th.

Sphere of the Fixed Stars.

Taurus. When this zodiacal constellation is on the meridian, the most brilliant stars in the northern hemisphere are above the horizon,—Arietis, Castor, Pollux, the splendid stars in Orion, Algol, Capella, Procyon, Sirius, Regulus, and Denebola. The Pleiades, an as-

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terism in the neck of Taurus, is composed of several minute stars, the brightest of which are Asterope, Taigeta, Maia, Celino, Electra, Pleione, Merope, and Atlas. The Hyades are a cluster of stars in the face of Taurus; Aldebaran represents the southern eye, and ϵ the northern. Aldebaran, the Pleïades, and β and ζ, the stars at the extremities of the horns, form a trapezoid. The Pleïades, Aldebaran, and β, form an obtuse angled triangle. Aldebaran, ζ, and β, form an acute angled triangle. β, the extremity of the northern horn, represents also the southern foot of Auriga, on the skirts of the Via Lactea. The principal star in this constellation (Aldebaran) rises on the 1st of this month, at 2 minutes after noon, and passes the meridian at 25 minutes after 7 in the evening.

TELESCOPIC OBJECTS IN TAURUS.

Double Stars. Aldebaran, ϑ, κ, ν, τ, ϕ, χ, 4, 30, 62, 66, 88, 103, 105, 111, 114, 117, and 118.

Triple Stars. δ and ϵ; above 1.2 δ is a triple star. 140 near to Propus is a quintuple star.

North of ζ is a nebula, with a whitish light, elongated like the flame of a taper.

41 is supposed to be a variable star.

COMETARY ASTRONOMY.

Within the last few years greater light has been thrown on the nature of comets, as to their physical structure, and laws of motion, than could be possibly anticipated by the astronomers of antiquity. These bodies were, in general, considered to be meteors, generated in, and passing through, the atmosphere; in later years, when a higher place had been assigned them in

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the heavens, they were regarded as wandering stars, entering by chance unvisited regions, and after attracting for a longer or shorter space of time the curious eye, or terrifying the timid heart, they disappeared never more to return.

Comets seem in all ages to have made peculiar impression on every class of society,—the learned as well as the unlearned; they were a terror to princes, a mystery to philosophers, gloomy presages of calamity to those countries from whence they were visible, and powerful agents for the crafty to excite the fears of the superstitious and credulous. As far back as the days of Homer they were considered harbingers of divine vengeance:

> A fatal sign to armies on the plain,
> Or trembling sailors on the wat'ry main.

Pliny says: "A comet is a body which is particularly frightful, and not easy to be propitiated; its cruel and powerful agency, shewed itself in the poisoning of Claudius, and the tyranny of Nero his successor." Of similar sentiments were Cicero and most of the poets of antiquity. At the dawn of science, after the long and dreary night of the middle ages, they were still regarded as messengers of direful portent, charged with "the corruption of the air, the cause of earthquakes, war, dearth of corn, yea, a common death of man and beast." Some, however, considered them in a more cheering and animating point of view, as "spirits, which having lived on the earth innumerable ages, and having at last completed their term of existence, celebrate their last triumph, and are recalled to heaven in the form of shining stars." Kepler, the celebrated astronomer, en-

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tertained the most absurd ideas of comets; he conceived them to be "a species of huge animals, generated in the ethereal spaces, and that the earth, also a huge animal, is so terrified at the approach of a comet, that it sweats out a great quantity of vapour through terror, and that hence arise great rains and floods."

The following is a description of comets, from the "Divine Weeks and Works" of Du Bartas, a French poet, who lived in the sixteenth century:

> Here in the night appears a flaming spire,
> There a fierce dragon, folded all in fire;
> Here a bright comet, there a fiery stream;
> Here burning lances, there a burning beam;
> Here seems a horned goat, environed round
> With fiery flakes about the air to bound;
> There with long bloody hair, a blazing star
> Threatening the world with famine, plague, and war;
> To princes death, to kingdoms many crosses,
> To all estates inevitable losses;
> To herdsmen rot, to ploughmen hapless seasons,
> To sailors storms, to cities civil treasons.

Lubienitz, a Polish writer, speaks of a comet, which "came out from an opening in the heavens, like to a dragon with blue feet, and a head covered with snakes."

As a suitable companion to these terrific pictures, we subjoin the following from the "Exempla Cometarum" of Rossenburgh, cotemporary with Newton:

"In the year 1527, about four in the morning, not only in the Palatine of the Rhine, but nearly over all Europe, appeared for an hour and a quarter, a most horrible comet, in this sort. In its length it was of a bloody color inclining to saffron. From the top of its train appeared a bended arm, in the hand whereof was

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Comets.

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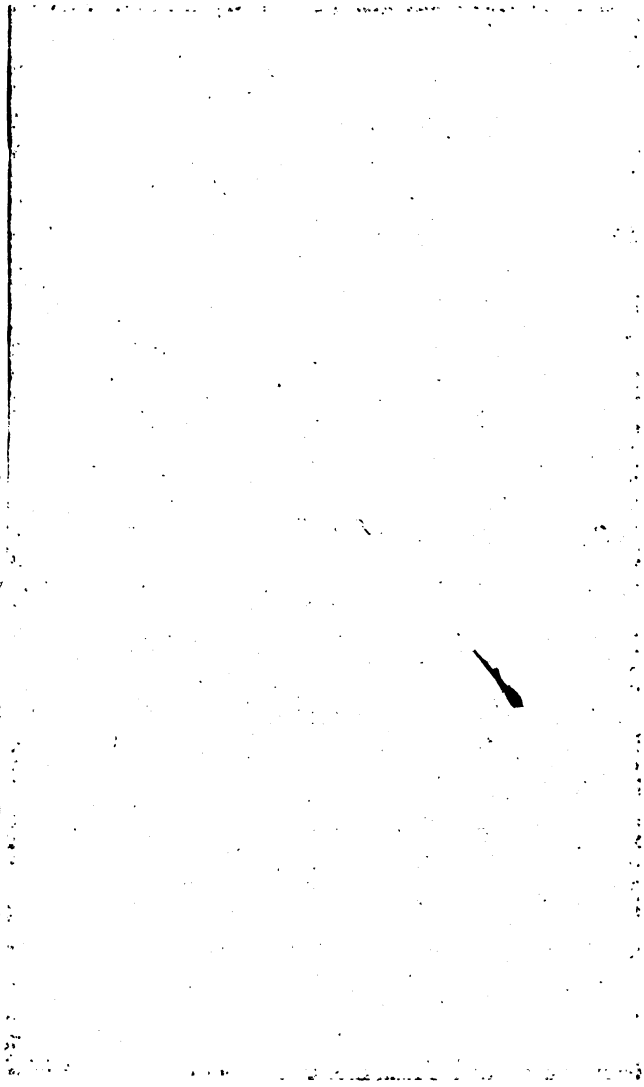

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a huge sword in the instant posture of striking. At the point of the sword was a star. From the star proceeded dusky rays, like a hairy tail; on the side of them other rays, like javelins or lesser swords, as if imbrued in blood, between which appeared human faces of the color of blackish clouds, with rough hair and beards. All these moved with such terrible sparkling and brightness, that many spectators swooned with fear!"

In perfect accordance with these descriptions, are the drawings of comets in the old treatises on astronomy;—a Celestial Atlas, published about the year 1680, has several, in which the fancy of the artist has endeavored to embody the wild and distorted descriptions of historians.

We select a few of these monstrous apparitions with their quaint names and descriptions:

"Some comets," says the writer, "resembling the form of a round dish or platter: of this kind the chief is called *Rosa*, and is of a bright shining silver color, mixed with gold or amber; and some of this sort, that are not perfectly round, resembling the form of a shield:"—

SOLARIS SIVE ROSA.—*(See fig. 1.)*

"Others resembling a horse's mane, not always of the same shape and figure. Of these Pliny saith, that they are very swift of motion, and turneth about themselves:"

EQUINUS BARBATUS.—*(See fig. 2.)*

"Others resembling burning lamps or torches, and are of several shapes; sometimes their flame or blaze carried upward like a sword; some like a dart or javelin, and some like a cimitar with a hilt.

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LAMPA DIFORMIS.—*(See figs.* 3, 4, 5.*)*

JACULIFORMIS LUNATUS.—*(See fig.* 6.*)*

ENSIFORMIS.—*(See figs.* 7, 8.*)*

COMETA MONSTRIFERUS.—*(See figs.* 9, 10.*)*

From this introductory sketch, it will be sufficiently evident, that there is no class of bodies in the universe, concerning which there has existed so much groundless prejudice and apprehension, as comets; nor is this feeling peculiar to the earlier ages,—about the latter part of the year 1828, an impression generally prevailed that some baleful influence was connected with a comet then about to appear, of which it had been affirmed that it was the most likely of all others to come in contact with the earth: this was the comet of Encke. The German and French philosophers also predicted that the comet of Biela would, in the year 1832, breathe desolation on the human race, and, by its shock, reduce this beautiful world to its original chaos. In this country notices appeared in the public prints relative to a comet, said to be visible, and those who possessed telescopes were directed to the place in the heavens were the monster was to be found; every one, who saw it, wondered that it remained stationary; it would, indeed, have been a wonderful phenomenon if it had moved, for this fancied comet proved to be the nebula in the girdle of Andromeda, the position of which, in the heavens, was as permanent as that of any of the fixed stars! At length the expected comet did appear, but only dimly seen with the telescope: it passed the earth's orbit, crossed the paths of Venus and Mercury, mingled its mysterious cloud-like form with the solar rays, and disappeared.

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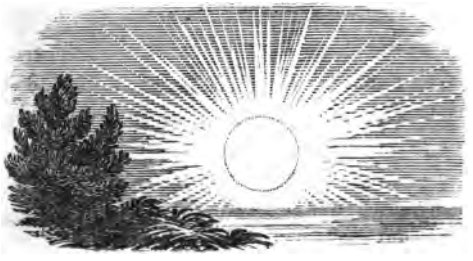
Both of these Comets,—the comet of Encke, and the comet of Biela, *will return this year*, and cross the earth's orbit,—the former in the Spring, and the latter in the Autumn, and the only antidote to any terror, on this account, is an investigation of the nature of these bodies, and the paths which they pursue,—a task which it is proposed to attempt in the present volume of Time's Telescope, and from this investigation, it is presumed, that it will abundantly appear, that comets are "harmless visitants," and not baleful omens, or agents destined to destroy our beautiful world.

It was a world as fresh and fair
As e'er revolved round sun in air;
Its course was free and regular,
Space bosomed not a lovelier star.
The hour arrived—and it became
A wandering mass of shapeless flame,
A pathless comet, and a curse,
The menace of the universe;
Still rolling on with innate force,
Without a sphere, without a course,
A bright deformity on high,
The monster of the upper sky!

LORD BYRON'S *Manfred*.



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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

FEBRUARY.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination South.	Equation of time added to apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Wednesday.	7 28	4 32	20 56	17 17	13 51
7th Tuesday....	7 17	4 43	21 20	15 30	14 27
13th Monday....	7 6	4 54	21 44	13 34	14 34
19th Sunday	6 55	5 5	22 8	11 30	14 13
25th Saturday ...	6 43	5 17	22 30	9 20	13 28

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
		h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	Noon.	22 14	21 1	21 0	1 11	14 5	0 11
	h. m.						
7th.	4 20	22 18	21 7	20 55	0 52	13 39	23 48
13th.	9 55	22 28	21 14	20 50	0 34	13 14	23 25
19th.	15 17	22 40	21 22	20 46	0 16	12 49	23 2
25th.	19 57	22 55	21 29	20 42	23 56	12 25	22 39

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MARCH.

SOLAR PHENOMENA.

The sun enters Aries at 11 min. after 2 of the afternoon of the 20th of this month.

LUNAR PHENOMENA.

Phases of the Moon.

New Moon,	2nd day	at 14 min.	after 3	afternoon.
First Quarter,	9th	13	7	evening.
Full Moon,	16th	22	3	afternoon.
Last Quarter,	24th	41	8	morning.

Conjunctions of the Moon with the Planets and Stars.

March 2nd,	with Jupiter.....	4 morning.
8th,	.... Aldebaran	11 night.
15th,	.... Saturn	1 afternoon.
24th,	.... 1 μ in Sagittarius.	3 morning.
24th,	.... 2 μ in Ditto .	4
27th,	.... Mars.....	10
27th,	.... Uranus.....	midnight.
29th,	.... Venus	3 afternoon.
30th,	.... Jupiter.....	1 morning.

PHENOMENA PLANETARUM.

Mercury in conjunction with Jupiter at 1 in the afternoon of the 8th of this month. Greatest south latitude on the 9th. Superior conjunction with the sun at 45

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min. after 10 of the evening of the 19th. Ascending node on the 28th.

Venus in her descending node on the 5th. In conjunction with Uranus at 7 in the morning of the 12th, difference in declination 18′; with μ in Capricornus on the 17th, difference in latitude 4′.

Phases of Venus.

The proportions of the bright and dark phases of this planet are as follow:—

March 1st.—Illuminated part = 9.3869
Dark part = 2.6131

Mars in conjunction with 813 Mayer, difference of latitude 3′.

The Asteroids.

			Hrs.	Min.			
Vesta,	1st day.	Right Ascension	8	12.	N. Declin.	25°	53′
	9th	.....	8	10.	.....	26	5
	17th	.....	8	9.	.....	26	8
	25th	.....	8	11.	.....	26	2
Juno,	1st	.....	10	3.	.....	5	42
	9th	.....	9	57.	.....	7	0
	17th	.....	9	53.	.....	8	12
	25th	.....	9	50.	.....	9	14
Pallas	1st	.....	21	59.	.....	0	24
	9th	.....	22	9.	.....	0	56
	17th	.....	22	19.	.....	1	29
	25th	.....	22	29.	.....	2	4
Ceres,	1st	.....	23	30.	S. Declin.	11	52
	9th	.....	23	42.	.....	10	35
	17th	.....	23	54.	.....	9	19
	25th	.....	0	5.	.....	8	4

Jupiter in conjunction with 81 in Aquarius on the 21st; difference of latitude 13′.

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Eclipses of the Satellites.

Jupiter is too near the sun to admit of any of these being visible.

Saturn in opposition at 30 min. after 6 of the morning of the 2nd.

FORM OF SATURN'S RING.

March 21st.—Semi-transverse axis —— 45″.46
Semi-conjugate axis —— 4 .13

There is every reason to conclude that a more vigilant examination of the planet Saturn, by skilful observers, with exquisite instruments, would be amply repaid by extensive discoveries connected with its mysterious structure. It has only recently been observed that the ring is not concentric with the globe of Saturn, the orb being nearer to the western than the eastern side: from a mean of fifteen observations, by professor Struve, it is found that the interval between the outer edge of the globe, and the outer edge of the ring, on one side, is 11″.073, and on the other side, the interval is 11″.288; consequently there is an eccentricity of the globe in the ring equal to 0″.215. It is suspected that the outer ring is separated by numerous dark divisions, extremely close to each other, exhibiting such an appearance as though the ring were formed of several small rings in the same plane. These divisions, which are occasionally very distinctly seen, are at other times not to be perceived, though the various circumstances with a favorable atmosphere continue the same. This has suggested the idea, that the outer ring has a very dense yet variable atmosphere, which occasionally intercepts or affords a view of these divisions. The external ring is not so bright as the internal; and the inner edge

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of the internal ring is less bright than the outer parts, and resembles the planet in color: the edges of the ring appear to be rounded.

Sphere of the Fixed Stars.

Altitudes of the stars at the Vernal Equinox at 30 min. after 8 in the evening.

Lynx in the Zenith. Leo Minor, 55°. Coma Berenices, 30°. Cor Caroli, 36°. Arcturus, 10°. Sextans Hadlieanus, 30°. Alphora in Hydra, 25½°. Procyon, 44°. Monoceros, 40°. Sirius, 20°. Lepus, 15°. Rigel, 22°. Betelgeux, 41°. Belt of Orion, 31°. Star in the summit of the southern horn of Taurus, 51°. Aldebaran, 29°. Hyades, 28½°. Menkar, 15°. Arietis, 12°. Musca Borealis and Triangula, 20°. Algol, 33½°. Algenib, 41°. Mirach, 13°. Almaach, 25°. Capella, 63°.

TELESCOPIC OBJECTS.

Orion. This is the most splendid and interesting constellation in the heavens. Bellatrix and Betelgeux, the stars that form the shoulders of Orion, present a remarkable contrast of color,—the latter shines with a fiery scintillating light.

Double Stars. δ, ζ, η, λ, φ, and Rigel in the left foot of Orion; 23, 26, 32, 33, 38, 52, 59, and 68, are also double stars; west of Betelgeux are two double stars. Between λ and Betelgeux is a cluster of stars; χ is composed of five stars; between ν and ζ is a cluster of stars; another cluster is near 73. σ and ϑ are quintuple stars. ι is a multiple star. A little below ι, in the sword of Orion, is the most remarkable nebula in the heavens.

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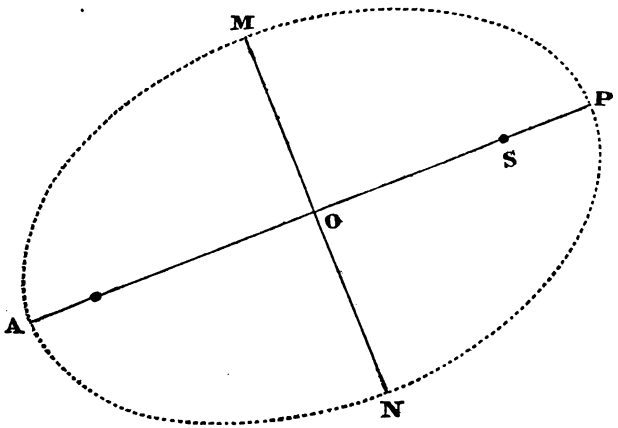
COMETARY ASTRONOMY.

To facilitate the explanation of the phenomena of comets, it is proposed to point out those peculiarities in which they resemble, and those in which they differ from planets.

The following diagram will illustrate some of the terms employed in this branch of Astronomy.



The ellipse is intended to represent the orbit of a comet; the sun is situated in one of the foci, S. The major axis, P A. Semi-axis major, P O. The place of perihelion, P. Perihelion distance, P S. The place of aphelion, A. Aphelion distance, A S. The minor axis, M N. The eccentricity, O S.

Comets and Planets.

Planets perform an apparent revolution round the earth in twenty-four hours; this is also the case with comets during the time of their being visible. This

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apparent revolution is caused by the rotation of the earth about its axis, from west to east, and this real motion occasions the sun, moon, planets, comets, fixed stars, and the whole frame of nature to appear to revolve in an opposite direction, or from east to west.

Comets perform their revolutions round the sun, as the centre of their motions, as also the planets; but the orbits of comets are very elliptical, and those of planets nearly circular.

Planets and comets both obey the same laws in pursuing their respective courses round the sun, and though the shapes of their orbits are very dissimilar, yet each revolves round the central body in an ellipse, the sun occupying one of the foci of the ellipse: also that lines drawn from the sun to the planet or comet, sweep over equal areas, in equal portions of time, and that the squares of the times of revolution are as the cubes of the mean distances of the comet or planet from the sun.

Planets and comets are opaque bodies, and shine only by the light emitted from the sun: this is evident from the phases exhibited by the moon, Venus, Mercury, and Mars, when in situations where parts of their unenlightened orbs are turned to the earth. This appearance has also been observed in comets, particularly the one which is expected in 1835. Comets, also, have been observed to transit the sun's disc, which interesting phenomenon was observed in one that appeared in 1819; its appearance, when on the disc, was that of a nebulous spot; this comet also exhibited phases; these are sufficient proofs, that comets are not self-luminous, but like the planets, shine only by reflected light.

Planets and comets have atmospheres; those of the

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latter, however, are very considerable, and stream off in a direction opposite to the sun. In these, and some other particulars, there is sufficient resemblance between planets and comets to prove that they are both members of the same family, of which the centre is the sun.

In many points, however, there is a great dissimilarity between planets and comets;—a planet may be traced through the whole of its path round the sun,—through every degree of its course, without losing sight of it, excepting for a short time before and after its conjunction with the sun, and even this has been done with the planet Venus,—but comets, on the contrary, enter at one part of the heavens, and disappear at a place not very remote from the first place of observation. This was the case with the comet of Encke; it was dimly recognized in Pegasus, passed through Equuleus, entered Antinous, and then became invisible in the solar rays. The longest track of any comet on record is that of 1820, observed by Captain Basil Hall at Valparaiso, for three months, in which time it described a curve equal to 300°.

Planets, as they keep through the whole of their annual courses, at nearly the same distances from the centre of the system, vary but little in their apparent magnitudes, as seen from the sun, and with the exception of Venus and Mars, not very considerably as seen from the earth:—Comets, on the contrary, at first appear very small, and gradually increase in size: the comet of 1769 will afford an example,—it appeared at first like a minute nebula, rapidly increased in size as it advanced, and when at its maximum, the coma surrounding the head was equal to a degree, or twice the apparent dia-

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meter of the moon; the comet that was seen in January, 1831, will furnish an illustration of their diminution; on the 7th day it shone with the brilliancy of a star of the second magnitude; on the 26th it exhibited a pale nebulous appearance, and could only be seen with the telescope. It must, however, be here observed, that this increase and diminution arise not merely from the advance or retreat of the comet, in relation of distance, but from this and the solar action, which raises the nebulous matter, and in some way influences the nucleus as the comet approaches, which matter is again condensed as the comet retreats from the sun; distance diminishes, and proximity increases the angle under which a body is seen; so that in comets there are two principles combining to affect their apparent and real magnitudes.

Planets move nearly in the same plane with one another, their orbits not being much inclined to the earth's path or ecliptic; the larger planets, Jupiter and Saturn, being each respectively 1° 19′ and 2° 30′; whereas, comets make all possible angles with the ecliptic, from below 10° to paths at right angles to the courses of the planets: the orbit of the comet of Encke is inclined 13° 20′, that of Biela, 13° 32′, that of Halley, 17° 39′, the comet of 1680, 61° 22′, and one that was observed in 1818, had its orbit inclined to the ecliptic in an angle of 89° 47′.

Planets move all the same way in the order of the signs, that is from west to east; comets move both ways, direct and retrograde; nor are these contrary motions merely apparent, being combined with the earth's motions, which make even the planets appear to move

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Comet of 1811

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backwards, which movement they have also; but their motion, in their orbits, are absolutely in the order in which the planets move, and contrary to this order: a *direct* comet will appear to move *contrary* to the order of the signs when it is passing between the earth and sun, and its absolute motion exceeding that of the earth; this was the case with the comet of Encke in 1828, it passed from Aries towards Pisces, Aquarius, and Capricornus; when it arrived on the opposite side of the sun, had it then have been visible, it would have appeared in its direct course.

To the planets the disc of the sun appears nearly of the same magnitude throughout the whole of their respective annual courses; whereas, some comets, when at their aphelion, would have the sun not much larger than a star of the first magnitude, and when returning and arrived at the orbit of Uranus, it would see the sun about the size that Venus is when largest; at the orbit of Saturn, the solar angle would be 3′; Jupiter, 6′; Mars, 21′; Earth, 32′; Venus, 46′; Mercury, 80′; and to the comet of 1680, when in perihelion, the sun would appear 100° in breadth, or 40,000 times as large as the sun appears to us.

The planets move with nearly uniform velocity throughout the whole of their respective courses: this is very far from being the case with comets; that of 1680, when in perihelion, or that point nearest the sun, moved 1,768,000 feet in a second of time, and when in aphelion, or most remote from the sun, only 83 feet in the same time. The great comet of 1811, in aphelion, is eleven months describing *a second of space*,—a rate of motion little exceeding the swiftness of a man walking!

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The most remote planet is, when compared to the distance to which comets range, very near the sun: the distance of Uranus is 1800 millions of miles; the comet of Halley extends beyond this planet 1620 millions of miles, or 3420 millions of miles from the sun; that of 1680, at its aphelion, is 8200 millions of miles, and other comets extend their wondrous path considerably beyond this remote point!

The periods of planets vary from 88 days of our Earth's, which is the year of Mercury to that of Uranus, which is 30,686 days, or 84 years: the periods of comets vary from 3½ years, (that of the comet of Encke,) to 75 years, the period of the Halley comet; 575 years the comet of 1680; 3383 years that of 1811; and 7334 years, which is the period of the comet of 1763.

The number of planetary bodies, including satellites, is twenty-nine: the number of comets actually observed exceeds four hundred; and the whole number that traverse the system is supposed to amount not merely to thousands, but to millions! this statement seems too vast for credibility, but a rigid calculation intimates that there are millions of comets whose perihelia are within the orbit of Uranus, and we have no reason to doubt but that there are many whose perihelion distance is without the orbit of this remote planet!

The planets, as they appear to our earth, either always present the same invariable disc, or have their orbs subject to a periodical variation, called phases; this is owing to the earth and planets always holding on the same courses relative to one another: those that are between the earth and sun are called inferior, or below us; those that are beyond, which include the terrestrial

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

MARCH.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination South.	Equation of time added to apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Thursday ...	6 36	5 24	22 49	7 27	12 35
7th Wednesday.	6 24	5 36	23 12	5 8	11 14
13th Tuesday....	6 12	5 48	23 34	2 47	9 39
19th Monday....	6 0	6 0	23 56	0 25 North.	7 54
25th Sunday	5 49	6 11	0 17	1 55	6 3

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	23 58	23 8	21 36	20 39	23 42	12 4	22 22
7th.	4 1	23 25	21 43	20 36	23 25	11 40	22 1
13th.	9 45	23 44	21 50	20 32	23 8	11 17	21 40
19th.	14 47	0 1	21 57	20 29	22 52	10 53	21 19
25th.	19 34	0 22	22 4	20 26	22 35	10 30	20 58

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APRIL.

SOLAR PHENOMENA.

I see, diffused
In radiant orders, essences sublime,
Of various offices, of various plume,
In heavenly liveries distinctly clad,
Azure, green, purple, pearl, or downy gold,
Or all commixed; they stand, with wings outspread,
Listening to catch the Master's least command,
And fly through nature ere the moment ends.

Light and Colors. If the objects of the material world had been illuminated with white light, all the particles of which possessed the same degree of refrangibility, and were equally acted upon by the bodies on which they fall, all nature would have shone with a leaden hue, and all the combinations of external objects, and all the features of the human countenance, would have exhibited no other variety but that which they possess in a pencil sketch or a China-ink drawing. The rain-bow itself would have dwindled into a narrow arch of white light,—the stars would have shone through a grey sky,—and the mantle of a wintry twilight would have replaced the golden vesture of the rising and the setting sun. But he who has exhibited such matchless

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skill in the organization of material bodies, and such exquisite taste in the forms upon which they are modelled, has superadded that ethereal beauty which enhances their more permanent qualities, and presents them to us in the every varying colors of the spectrum. Without this the foliage of vegetable life might have filled the eye and fostered the fruit which it veils,—but the youthful green of its spring would have been blended with the dying yellow of its autumn. Without this the diamond might have displayed to science the beauty of its forms, and yielded to the arts its adamantine virtues;—but it would have ceased to shine in the chaplet of beauty, and to sparkle in the diadem of princes. Without this the human countenance might have expressed all the sympathies of the heart, but the "purple light of love" would not have risen on the cheek, nor the hectic flush been the herald of its decay.

The gay coloring with which the Almighty has decked the pale marble of nature, is not the result of any quality inherent in the colored body, or in the particles by which it may be tinged, but is merely a property of the light in which they happen to be placed. Newton was the first person who placed this great truth in the clearest evidence. He found that all bodies, whatever were their peculiar colors, exhibited these colors only in white light. When they were illuminated by homogeneous *red* light, they appeared red; by homogeneous yellow light, yellow, and so on; "their colors being most brisk and vivid under the influence of their own day-light colors." The leaf of a plant, for example, appeared green in the white light of day, because it had the property of reflecting that light in greater abundance than any other.

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When it was placed in homogeneous *red* light, it could no longer appear green, because there was no green light to reflect; but it reflected a portion of red light, because there was some red in the compound green which it had the property of reflecting. Had the leaf originally reflected a pure homogeneous green, unmixed with red, and reflected no white light from its outer surface, it would have appeared quite black in pure homogeneous red light, as this light does not contain a single ray which the leaf was capable of reflecting. Hence the colors of material bodies are owing to the property which they possess of stopping certain rays of white light, while they reflect or transmit to the eye the rest of the rays of which white light is composed.

So far the Newtonian doctrine of colors is capable of rigid demonstration; but its author was not content with carrying it thus far,—he sought to determine the manner in which particular rays are stopped, while others are reflected or transmitted; and the result of this profound enquiry was his theory of the colors of natural bodies.—*Brewster's Life of Newton.*

Thomson, the author of the Seasons, in his poem, sacred to the memory of Sir Isaac Newton, thus refers to the discoveries of this great philosopher in this beautiful branch of science:—

> Nor could the darting beam of speed immense
> Escape his swift pursuit, and measuring eye.
> Even light itself, which every thing displays,
> Shone undiscovered, till his brighter mind
> Untwisted all the shining robe of day;
> And from the whitening undistinguished blaze,
> Collecting every ray into his kind,
> To the charmed eye educed the gorgeous train,

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Of parent-colors. First the flaming red
Sprung vivid forth; the tawny orange next;
And next delicious yellow, by whose side
Fell the kind beams of all-refreshing green.
Then the pure blue, that swells autumnal skies,
Ethereal played; and then of sadder hue,
Emerged the deepened indigo, as when
The heavy-skirted evening droops with frost.
While the last gleamings of refracted light
Dyed in the fainting violet away.
These, when the clouds distil the rosy shower,
Shine out distinct adown the watery bow;
While o'er our heads, the dewy vision bends
Delightful, melting on the fields beneath.
Myriads of mingling dyes from these result,
And myriads still remain; infinite source
Of beauty, ever-blushing, ever-new!

The sun enters Taurus at 36 minutes after 2 of the morning of the 20th of this month.

LUNAR PHENOMENA.

Phases of the Moon.

New Moon	1st	day at	2 min.	after 5 morning.
First Quarter	8th	....	49	 1
Full Moon	15th	....	0	 4
Last Quarter	23rd	....	12	 4
New Moon	30th	....	40	..... 3 afternoon.

Conjunctions of the Moon with the Planets and Stars.

April 2nd, with Mercury.....at 2 morning.
11th, ... Saturn ..... 5 afternoon.
24th, ... Uranus ..... 10 morning.
25th, ... Mars ..... noon.
26th, ... Jupiter ..... 9 night.
28th, ... Venus ..... 6 evening.
30th, ... Mercury ..... midnight.

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The conjunction of the Moon with Saturn will prove an occultation.

PHENOMENA PLANETARUM.

Mercury, in perihelion, on the 2nd of this month, attains his greatest north latitude on the 13th. At his greatest elongation, as an evening star, on the 14th, angle of elongation, 19° 50′. Stationary on the 24th, near ζ in Aries.

Venus in conjunction with Jupiter at 11 of the night of the 3rd, difference in declination, 19′; with φ in Aquarius on the 4th, difference of latitude, 15′. In aphelion on the 9th.

Phases of Venus.

The proportions of the bright and dark phases of this planet are as follow:

April 1st.—Illuminated part = 10.3075
Dark part..... = 1.6925

Mars in conjunction with ι in Capricornus on the 3rd, difference of latitude, 7′; with 54 in Aquarius on the 25th, difference of latitude, 11′.

The Asteroids.

		Hrs. Min.		
Vesta,	2nd day. Right Ascension,	8 15	N. Declin.	25° 49′
	10th	8 20	.....	25 30
	18th	8 27	.....	25 4
	26th	8 35	.....	24 33
Juno,	2nd	9 49	.....	10 6
	10th	9 49	.....	10 45
	18th	9 50	.....	11 14
	26th	9 53	.....	11 32
Pallas,	2nd	22 39	.....	2 40
	10th	22 48	.....	3 16
	18th	22 57	.....	3 51
	26th	23 6	.....	4 25

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		Hrs. Min.		
Ceres,	2nd	0 17	S. Declin.	6° 49′
	10th	0 28	.....	5 36
	18th	0 40	.....	4 25
	26th	0 51	.....	3 16

Jupiter in conjunction with ϕ in Aquarius at 8 in the evening of the 5th, difference of latitude, 4′; with 968 Mayer on the 24th, difference of latitude, 6′.

Eclipses of the Satellites.

None of these will be visible this month.

FORM OF SATURN'S RING.

April 30th.—Semi-transverse axis —— 43″.22
Semi-conjugate axis —— 4 .55

Uranus in conjunction with Mars at 11 of the night of the 6th, difference in declination, 38′.

Sphere of the Fixed Stars.

On the 1st of the month Gemini passes the meridian at $\frac{3}{4}$ after 6, and Cancer at $\frac{1}{4}$ after 8 in the evening.

Gemini. This zodiacal constellation is bounded by the Lynx on the north, Cancer on the east, Monoceros and Canis Minor on the south, and Taurus on the west. The stars Castor and Pollux indicate the heads of the twins; and ξ, γ, ν, and μ, the feet,—these latter are on the borders of the Via Lactea, and arranged in a line. On the ecliptic is δ, which star is nearly in a right line with γ, ζ, and Pollux. γ, μ, ε, and ζ, form a square. Castor, Pollux, ζ, and ε, form a parallelogram.

Cancer is bounded on the north by the Lynx, east by Leo, south by Hydra, and west by Gemini. A line drawn from Procyon to Regulus points out β, 1.2 a, and κ. Another line through Castor and Pollux in Gemini points to β. γ Aselli borei, and δ Aselli aus-

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tralis, (the latter on the ecliptic,) form a triangle with β and 1.2 a. Præsepe is in the centre of a quadrangle formed with γ, δ, η, and ϑ.

TELESCOPIC OBJECTS IN GEMINI AND CANCER.

Castor is a double star, and one of the most interesting telescopic objects in the heavens; both of the stars of which it is composed are of a white color. (See plate of double stars, *Fig.* 1). Two stars may have the appearance of a double star, though they do not form a binary system, when the one is situated at an immense distance behind the other, but a little on one side of the line in which we see the first. They are in this case out of the reach of one another's attraction, though in the heavens they appear to be contiguous.

Sir William Herschel has shewn, that no two insulated stars can appear double to us, and that there are very many chances against the supposition that the great number of double stars which he has discovered should only appear to be double in consequence of the one being situated at a great distance behind the other, and out of the sphere of its attraction. Hence he concludes, that as casual situations will not account for the numerous phenomena of double stars, their existence must be owing to their mutual gravitation. This celebrated astronomer observed this double star (Castor) from the year 1778 to the year 1803, and could never perceive any variation in the distance of the two stars of which it is composed, which was invariably $1\frac{7}{8}$ of the diameter of the large one; in the angle of position, however, a remarkable change had taken place. In the year 1779, November the 5th, the smaller star was north of the larger one, and preceding it, in its diurnal motion,

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32° 47′; on March 27, 1803, it had diminished to 10° 53′; which was a decrease of 21° 54′ in the space of 23 years and 142 days. From the measures of this angle, taken at intermediate times, it appeared that the angle of position had undergone an irregular and gradual diminution. In the year 1759, Dr. Bradley had observed that the line joining the two stars which form Castor, was, at all times of the year, parallel to the line joining Castor and Pollux, and Dr. Maskelyne had verified this result in 1760 and 1761. By this observation, Sir William Herschel obtained an addition of 20 years to the period, and thus found that the angle of position must then have been 56° 32′ N. preceding. Hence in the space of 43 years, 142 days, the angle of position had diminished 45° 39′. From the regularity of its decrease, it is highly probable that the orbits in which the two stars move round their common centre of gravity, are nearly circular, and at right angles to the line in which we see them; and that the time of a whole apparent revolution of the small star round Castor will be 342 years and 2 months in a retrograde direction.

Pollux (the other bright star in Gemini) is a multiple star, and varies in its lustre; 50 years since it was brighter than Castor: it probably varies between the first and third magnitudes. κ is a very beautiful double star. In the lyre of Castor is a double star, the large star of which is white, and the small a ruddy purple. π is a double star, large star yellow, small bluish. δ and ζ are also double stars. North-west of η in Castor is a mass of small stars. It was when examining the small stars near η, in the feet of Gemini, that Herschel dis-

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covered the planet Uranus 13th March, 1781; he suspected at first that it was a comet.

Cancer. κ is a double star. 2κ is an extremely delicate double star, the larger star, white, the smallest, red. ρ is formed of six stars. σ of four stars; 3σ is double. ι is also double, the largest reddish white, the smallest dusky garnet. ϑ, ϕ, are also double. ζ is a triple star, two of which are of a pale red color; it requires very favorable circumstances to be distinctly seen; two of them are exceedingly unequal. The largest of these is larger than the single star, and the least of the two is less than the single star. Three stars (26, 73, and 74) have been missed from this constellation. Between γ and δ is a mass of small stars. Below the southern claw of Cancer is a cluster, in which two hundred stars have been counted. The nebula in Cancer, and that in Coma Berenices, are supposed to be the nearest clusters to the Via Lactea,—the nebula to which our sun belongs.

From some superior point (where, who can tell?
Suffice it, 'tis a point where gods reside.)
How shall the stranger-man's illumined eye,
In the vast ocean of unbounded space,
Behold an infinite of floating worlds,
Divide the crystal waves of ether pure,
In endless voyage without port? The least
Of these disseminated orbs how great!

COMETARY ASTRONOMY.

Figures of Comets.

The figures of comets are exceedingly various, from round nebulous spots, through all the gradations of mag-

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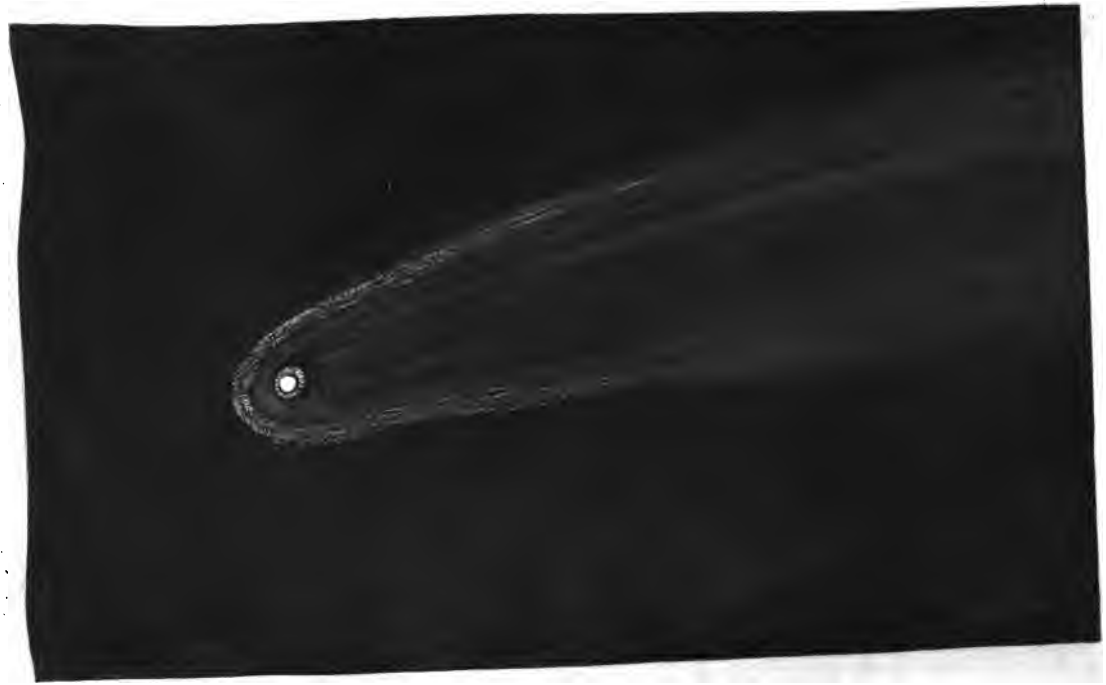

The Nucleus Enveloped in a Double Tail of a Comet.

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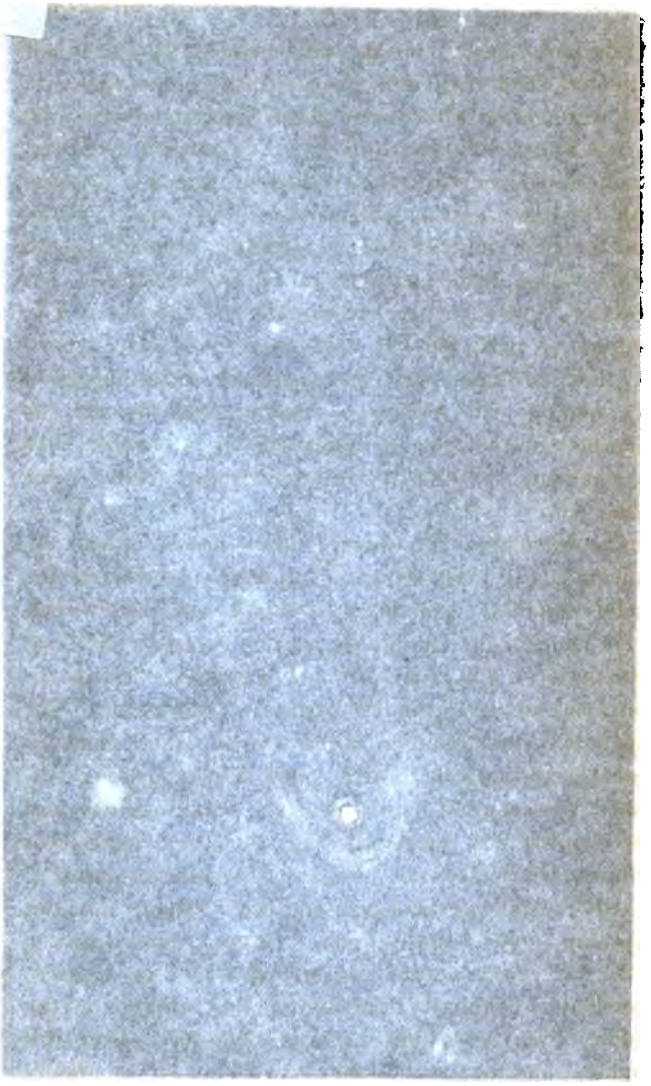
[illegible] and [illegible], [illegible] order, where [illegible] and then [illegible] in the [illegible] description whose vast [illegible] own like arches [illegible] [illegible] than the rest; an *envelope* [illegible] and a *tail*, which is the [illegible] one direction, and that direction [illegible] The component parts may be thus [illegible] the most brilliant part, and generally [illegible] of the envelope, the envelope brighter than [illegible] tail [illegible] diminishes in luminosity as it [illegible] the envelope, till lost in the surrounding ether.—(*See Plate 3.*)

The Nucleus. We scarcely know how to place reliance on the observations of antiquity relative to the nuclei of comets; not merely owing to the imperfection of the instruments employed, but the [illegible] of comets on the affairs of men, [illegible] and deluded the judgments of observers. The most careful examination of the largest [illegible] that has been observed within recent years (1811) [illegible] a measurable disc, [illegible] and this quantity was supposed [illegible] point was all that could be [illegible] in 1813, which sparkled [illegible] appearance of a solid nu[illegible] 1825, (*see plate 4,*) the nucl[illegible] unresolvable nebulosity, suddenly [illegible] middle, but no [illegible] as in a [illegible] brightest part was round, and from [illegible]



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nitude and density, to that order, where the tail is first indicated, and then ascending higher in the scale, to that description whose vast projecting luminosities are thrown like arches across the sky. In general, however, comets are distinguished by a *nucleus*, which is brighter than the other parts, and probably of a density greater than the rest; an *envelope* surrounding the nucleus, and *a tail*, which is the continuation of the envelope in one direction, and that direction opposite to the sun. The component parts may be thus described: the nucleus the most brilliant part, and generally in the centre of the envelope, the envelope brighter than the tail, the tail which diminishes in luminosity as it recedes from the envelope, till lost in the surrounding ether.—*(See Plate 3.)*

The Nucleus. We scarcely know how to place reliance on the observations of antiquity relative to the nuclei of comets; not merely owing to the imperfection of the instruments employed, but the dreaded influence of comets on the affairs of men, magnified the conceptions and deluded the judgments of observers. The most careful examination of the largest comet that has been observed within recent years (1811) scarcely furnished a measurable disc, namely, $\frac{3}{4}$ of a second, and this quantity was supposed to be in excess; a luminous point was all that could be observed in one that appeared in 1813, which sparkled now and then, without the least appearance of a solid nucleus. In the second comet of 1825, *(see plate 4,)* the nucleus appeared as a milky irresolvable nebulosity, suddenly much brighter in the middle, but no outline as in a planetary disc; this brightest part was round, and from 10″ to 15″ in diame-

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ter, but in the centre not the least suspicion of a brilliant point, especially when compared with small stars near it, which exhibited sharply defined points. It is hence concluded, that the nucleus of a comet is merely nebulous matter, more or less consolidated; several comets that have been lately observed seemed merely collections of vapour, with a slight tendency to condensation towards their centres, and of such very rare and pellucid constitutions, that the smallest stars have been distinctly seen through their very centres; of this nature are the two comets which will return this year.

But though many of the accounts of comets we are compelled to receive with hesitation, there are others which deserve our attention from the high authority connected with their description. The nucleus of the comet of 1618 is said to have broken into three or four irregular figures resembling burning coals, which changed their situation during observation as when a fire is stirred: a few days after this, these pieces were broken into a greater number, and changed into a cluster of small stars. In the comet of 1661, the nucleus changed from a round form into several fragments; an appearance, of a similar description, was observed in the comet of Halley, when visible in the year 1607. Some comets have been observed with their nuclei of an oblong form, others divided into two by a black separation in the middle: such peculiarities as these have not been remarked in any comet seen with modern instruments, and by modern observers; it is true, that no comet has appeared of late years, which at all approximates to those which shook their tresses over the heavens in the years 1652, 1680, and 1682.

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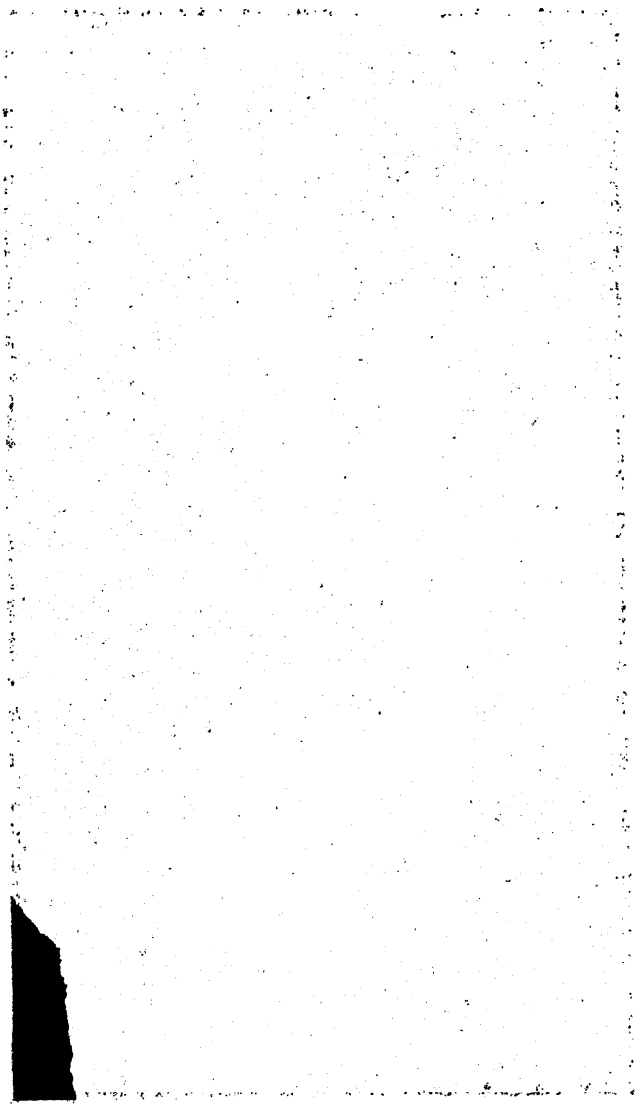

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The Envelope. The envelope is that part of the comet which surrounds the nucleus only on that side which is next to the sun and opposite to the tail; in some instances it is united with the nucleus,—in general, however, it is situated at a greater or less distance from it; the envelope passes in two streams of light on opposite sides of the nucleus, and forms that singular and well known phenomenon called the tail. The matter which composes the envelope seems to consist of the matter of the nucleus itself, raised by the solar action; the envelope does not appear till the comet is near the sun, when it gradually rises from the nucleus, and sinks again as the comet retreats from the sun; in some comets several of these nebulous envelopes have been observed, arranged in strata, the interior being the brightest, and the exterior less brilliant and more diffuse.

Hast thou ne'er seen the comet's flaming flight?
The illustrious stranger passing, terror sheds
On gazing nations from his fiery train
Of length enormous; takes his ample round
Through depths of ether; coasts unnumbered worlds
Of more than solar glory; doubles wide
Heaven's mighty cape; and then revisits earth,
From the long travel of a thousand years.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

APRIL.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination North.	Equation of time added to apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Sunday	5 34	6 26	0 43	4 39	3 55
7th Saturday ..	5 22	6 38	1 5	6 56	2 8
13th Friday	5 11	6 49	1 27	9 9	0 30
19th Thursday ..	4 59	7 1	1 49	11 16	subtract 0 57
25th Wednesday.	4 48	7 12	2 11	13 16	2 9

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	0 21	0 47	22 11	20 21	22 16	10 3	20 34
7th.	5 52	1 4	22 16	20 17	21 59	9 40	20 13
13th.	11 12	1 12	22 21	20 13	21 42	9 17	19 52
19th.	15 57	1 9	22 26	20 8	21 24	8 53	19 31
25th.	20 43	0 52	22 30	20 3	21 6	8 30	19 10

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MAY.

SOLAR PHENOMENA.

The northern regions of the earth are arrayed with the beauty of spring. The noon exhibits a canopy of boundless azure, the night reveals the wintry constellations sinking in the west, with the advance of those stars to the mid-heaven, which declare that the time of the singing of birds is come, and that the summer is advancing. The flower and the star appear each in its season, and send forth, the one its ray, and the other its fragrance, with unfailing precision. The lovely train of Flora delights the senses with its perfume and beauty; the thrush and blackbird fill the woods with melody, and Arcturus in the east, and Capella in the zenith, shed forth their brightest scintillations: the rose, the nightingale, and bright star in the hand of the Virgin, bloom, sing, and shine together; the violet from its shady bank, the lark from " its watch-tower in the sky," send forth their tribute of odour and harmony, as the stars in the soft Pleïades fade away in the glowing twilight of the vernal eve. As the fervid heat of summer increases, and light is more copiously diffused over the northern world, the stars shine with a subdued brilliancy; the melody of the grove ceases; the Aster tribe of flowers,

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with their diversified radiations, decorate the field and the garden, and with pure adoration expand their bright flowrets to receive the full effulgence of the summer sun.

The sun enters Gemini at 54 min. after 2 of the morning of the 21st of this month.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter,	7th day at	5 min. after	8 morning.
Full Moon,	14th	24	5 afternoon.
Last Quarter,	22nd	20	9 evening.
New Moon,	29th	56	11 night.

Conjunctions of the Moon with the Planets and Stars.

May	8th, with Saturn	at 9 evening.
	15th, ... ϕ in Ophiuchus ..	6
	21st, ... Uranus	7
	24th, ... Mars	noon.
	24th, ... Jupiter	2 afternoon.
	28th, ... Mercury	7 morning.
	28th, ... Venus	6 evening.

The conjunction with Saturn will prove an occultation; the immersion will take place at the dark limb of the moon, and about an hour after it has passed the meridian.

PHENOMENA PLANETARUM.

Transit of Mercury.

It is probable that the most interesting celestial phenomenon that the astronomer can behold, is a transit of a planet across the disc of the sun; it is interesting as well for its singularity as its rarity; it can occur only with the inferior planets, and with these in the present century, only thirteen can occur with Mercury, and two only with Venus in the same period. On the 5th of

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this month, in the morning, the planet Mercury will cross the disc of the sun, and appear on it as a circular black spot for nearly seven hours; this celestial phenomenon will be visible from its commencement to its termination to the whole of Europe, and a great part of Africa; the ingress will be visible to Asia, and the egress to America.

There is no doubt but that every lover of the science of astronomy, within the limits of the visibility of the transit, will endeavour to witness the spectacle,—to see this bright and beautiful gem, that shines with such a rosy brilliancy as the morning or evening star, now melting away in the full effulgence of the rising day, and then heralding the bright hosts of stars to glitter on the midnight sky,—to see this lovely jewel of the ruddy dawn, or evening shades, enter on the sun's glowing orb, with not merely dimmed splendor, but shrouded in intensest blackness, pursuing its course over a field of glory, yet clad in gloom; such a phenomenon will not fail to interest, and the observer, as he marks the blackness of the planet, in contrast with the solar effulgence, may apply the celebrated line to the messenger of the gods:—

"Dark with excessive light his robes appear."

The following are the particulars of this interesting phenomenon:—

	Apparent time.			Mean solar time.		
	h.	m.	s.	h.	m.	s.
External ingress, or beginning of the Transit	9	2	57	8	59	28
Internal ingress	9	6	17	9	2	48
Time of Mercury's nearest approach	12	28	50	12	25	20
Internal egress	3	51	11	3	47	41
External egress, or end of the Transit,	3	54	31	3	51	1

Duration of the Transit..6h. 51m. 34s.

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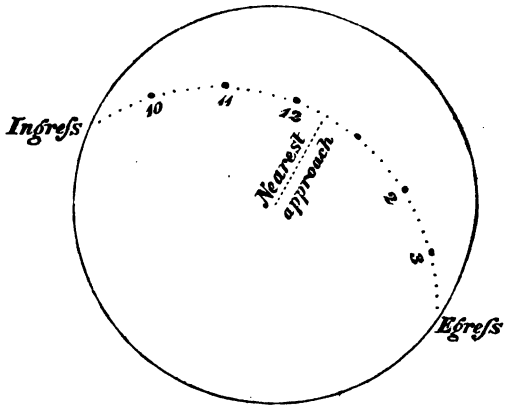
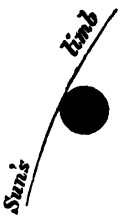
The following diagram will illustrate the points of ingress, nearest approach, and egress of the planet:—

Transit of Mercury over the Sun, 5th May, 1832.



Appearance of Mercury at the internal egress.



The dots represent the path of Mercury, and the figures indicate the hours, corresponding with the respective positions of the planet in its course over the solar disc.

In observing the transit, the same course may be pursued with Mercury that has been recommended for the planet Venus,—that previous to the time of the beginning of the transit, the observer should have his telescope properly fixed, and prepared with dark glasses to defend the eye, which he should keep fixed upon that point of the sun's limb where the planet is expected to

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enter; at the instant he suspects the contact to take place, he must note the time, and proceed to observe, in order to be certain that he was not mistaken. If he find that he was mistaken, he must continue to wait for it, always noting the time when he suspects it, in order that he may not miss it when it really happens; having entered on the sun's disc, wait for the internal contact and note the time; the same method is to be pursued for the internal and external contact when Mercury passes off the disc.

At the transit of Venus, in 1761, some singular phenomena were observed. At Madras, a kind of penumbra was noticed, preceding the first external contact two or three seconds of time; this dusky shade was so remarkable, that the observer was assured that the contact was near, which happened accordingly. In the transit of 1769, Dr. Maskelyne was very attentive to observe if this circumstance took place, but he could perceive no such effect. When Venus was a little more than half immersed into the sun's disc, he saw its whole circumference completed, by means of a vivid, but narrow, ill-defined border of light, which illuminated that part of its circumference that was off the sun; but this disappeared about two or three minutes before the internal contact. In the same transit, an observer had warning of the approach of Venus to the contact, by the sudden appearance of a violent corruscation, ebullition, or agitation, of the upper edge of the sun, five or six minutes before the limb of Venus broke in upon the sun; this, it was supposed, might have been owing to the atmosphere of Venus. Some perceived at the first external contact a kind of watery pointed shadow, appearing to give a

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tremulous motion to that part of the sun's limb. Some astronomers observed a luminous crescent at the times of the ingress and egress which enlightened that part of Venus's circumference, which was off the sun, so that the whole circumference was visible. At the internal contact the limb of Venus seemed, to most observers, to be united to the sun's limb by a black protuberance, or ligament, which was not broken by the thread of light till some seconds after the regular circumference of Venus seemed to have coincided with the sun's. Others observed that the thread of light between the limbs did not break instantaneously,—the points of the threads darting into each other, and parting again, in a quivering manner, several times before they finally adhered.

The last transit of Mercury occurred 4th November, 1822, but invisible in this country: it was witnessed in India, and an account transmitted to Dr. Olinthus Gregory, by Major J. A. Hodgson, Revenue Surveyor-General of India; the communication was inserted in the Memoirs of the Royal Astronomical Society of London, and is as follows:—

Russell Street, Chouringhy, Calcutta,
4th November, 1822.

The sun was frequently obscured by flying clouds at the commencement of the transit, that I thought it safest to use a large field of view until I saw the planet enter the sun. A cloud prevented my seeing the first external contact; I observed the first internal contact, but I cannot be certain to less than four or five seconds, as it was rather cloudy, and a power of 45 in the 42-inch telescope is not great.

At the end of the transit I used the 60-inch telescope, but reduced the aperture of 3.7 to 2.5, as the sun's limb is better

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defined with a small than a large aperture. The magnifying power applied was 60. It would have been more desirable to use a greater magnifying power; but as clouds were flying about occasionally, and partially obscuring the sun, I was afraid of the inconveniences attending a small field.

The observations of the preceding and following limbs of the planet, when leaving the sun, were made under favorable circumstances, and I am well satisfied with them, particularly with that of the following limb. No colored glass was used, the light of the sun was so faint that the eye could bear it; its limb appeared white and sharp, and the planet was dark, round, and well defined. I could not see it with the telescopes of the sextant, or reflecting circles, nor with a small Brewster's double object glass micrometrical telescope, though it showed the limbs of the sun perfectly well defined.

The most important observations are these:—

	h.	m.	s.
Internal contact.—Ingress or following limb ..	18	56	16.38
Ditto. At egress	21	38	34.11
External ditto. At egress	21	40	56.11
Mean time:—Estimated longitude	5	53	10

Captain Herbert did not see the beginning of the transit. He was at the same place and observed the

	h.	m.	s.
Internal contact at egress.....	21	38	42.11
External ditto.	21	40	55.11

using the 42 inch telescope with a power of 80, and no colored shade to the eye piece. He also took several micrometrical measurements with a Dolland's parallel wire micrometer applied to the same telescope. The astronomical clock was by Earnshaw, No. 14.

The transit was observed at the cantonment of Kurnaul, latitude north 29° 41′ 25″, estimated longitude 5h. 8m. 1s. by Walter Ewer, Esq.; telescope by Dolland, 5 feet focal length, power about 100; dark glasses used in the eye piece.

	h.	m.	s.
Mean time of 2nd internal contact	20	53	46.5
Ditto. external ditto.	20	56	16.5

J. A. HODGSON.

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The young astronomer will avail himself of the useful hints suggested by this communication in the management of his instruments in viewing the present transit.

A very pleasing method of observing the phenomenon, will be by transmitting the sun's image through a telescope into a darkened room; the image of the sun can be received on paper, and the whole transit observed without distressing the sight.

The transits of Mercury, for many centuries to come, can take place only in the months of May and November. The first observation of this kind was made by Gassendi, in November, 1631, since which period they have been frequent. The following is a list of those that will happen till the end of the present century; those marked with an asterisk will be visible in this country.

1835, November 7th.
* 1845, May 8th.
* 1848, November 9th.
* 1861, November 11th.
* 1868, November 4th.
* 1878, May 6th.
1881, November 7th.
1891, May 9th.
1894, November 10th.

A transit of Venus is a phenomenon of very rare occurrence, as will appear by the following list, which contains all those transits which have occurred since that which took place in December, 1639, inclusive, (the first that was ever known to have been seen by human being,) to the end of the 21st century.

1639, December 4th.
1761, June 5th.

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1769, June 3rd.
1874, December 8th.
* 1882, December 6th.
* 2004, June 7th.
2012, June 5th.

The transits of Mercury and Venus can happen only when they are in their nodes, and when the earth is in the same longitude; for many centuries to come the transits of Venus can take place only in the months of June and December.

No such useful results can be expected from the transits of Mercury as from those of Venus, namely, the ascertaining or confirming of the distance of the earth from the sun: owing to the greater distance of Mercury from the earth than Venus, the difference of their parallaxes is so little, as always to be less than the solar parallax that is sought, and therefore Mercury is considered ineligible for solving that interesting problem which, in 1769, was so satisfactorily derived from the transit of Venus.

Mercury in aphelion on the 16th of this month. Stationary near 38 in Aries on the 17th. In conjunction with Venus on the 20th.

Venus at her greatest south latitude on the 1st. In conjunction with o in Pisces on the 7th, difference of latitude 4′; with σ in Aries on the 21st, difference of latitude 1′.

Phases of Venus.

The following are the proportions of the light and dark phases of Venus:—

May 1st.—Illuminated disc = 11.0224
Dark part = 0.9776

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Mars in conjunction with Jupiter at 10 in the morning of the 26th, difference in declination 51′.

The Asteroids.

		Hrs.	Min.			
Vesta,	4th day. Right Ascension	8	44.	N. Declin.	23°	56′
	12th	8	54.	.....	23	13
	20th	9	5.	.....	22	24
	28th	9	17.	.....	21	31
Juno,	4th	9	58.	.....	11	39
	12th	10	3.	.....	11	38
	20th	10	9.	.....	11	29
	28th	10	17.	.....	11	12
Pallas	4th	23	15.	.....	4	57
	12th	23	23.	.....	5	27
	20th	23	31.	.....	5	54
	28th	23	38.	.....	6	17
Ceres,	4th	1	2.	S. Declin.	2	9
	12th	1	13.	.....	1	5
	20th	1	24.	.....	0	4
	28th	1	34.	N. Declin.	0	53

Eclipses of the Satellites of Jupiter.

None of these will be visible this month.

Saturn stationary near 1 in Leo on the 10th. In quadrature at 30 min. after 2 of the morning of the 30th.

FORM OF SATURN'S RING.

May 21st.—Semi-transverse axis —— 41″.75
Semi-conjugate axis —— 4 .25

Uranus in quadrature at 30 min. after 2 of the morning of the 9th. Stationary on the 22nd.

In ardent contemplation's rapid car,
From earth, as from my barrier, I set out.
How swift I mount; diminished earth recedes:
I pass the moon; and from her farther side,

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Pierce heaven's blue curtain; strike into remote;
Where, with his lifted tube, the subtle sage
His artificial airy journey takes,
And to celestial lengthens human sight.
I pause at every planet on my road
And ask for Him who gives their orbs to roll,
The foreheads fair to shine From *Saturn's ring*,
In which of Earths an army might be lost,
With the bold *comet* take my bolder flight,
Amid those sovereign glories of the skies,
Of independent native lustre proud;
The souls of systems; and the lords of life,
Through their wide empires!—

——What behold I now!
A wilderness of wonder burning round,
Where larger suns inhabit higher spheres.

Sphere of the Fixed Stars.

Positions of the principal stars on the 1st of the month, at 10 in the evening.

Castor and Pollux near the western horizon. Ursa Major in the zenith. A line drawn from the polar star by λ and μ, in Ursa Major, points out Regulus, or the Lion's heart; another line, from the same point, through γ in Ursa Major, passes through Denebola, or the tail of the Lion. Another imaginary line, through δ and γ in the Great Bear, passes through Leo Minor, Regulus, and Cor Hydræ. West of Cor Hydræ is Procyon, east is Crater and Corvus,—the latter formed of an imperfect square of four stars. Spica Virginis, Arcturus in Boötes, and Denebola, form an equilateral triangle,—Arcturus the most elevated, and Denebola to the west. A line through ϵ and η, in Ursa Major, passes through Gemma in Corona Borealis; another line from Arcturus,

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through Corona Borealis, passes through Hercules to the bright star Vega in Lyra. Vega, Althair in Aquila, and Delphinus, form an isosceles triangle, of which Vega is the summit.

TELESCOPIC OBJECTS.

Leo. Variable stars, ξ, ψ, 25, and *i*. Double stars, ω, both of which are red. 54, the largest white, the smallest greyish white. τ, the large star red, the small star bluish. ϕ, the large white, the small a pale red. ι is a beautiful double star. 7, 83, and 88, are also double stars. 90 is a triple star. Regulus is a double star.

γ, in Leo, is a binary system, the large star white, the small reddish white From the interval between the two stars, the ratio of their diameters, and the variation in the angle of position, it has been found that the apparent orbit of the small star is elliptical, and that it performs a whole revolution in about 1200 years in a retrograde direction. Between ♑ and ι are two faint nebulæ; two other nebulæ, of the same description, between ρ and ♑, —these nebulæ, though faint, are, in general, resolvable into stars.

Virgo. In this zodiacal constellation 20 and 91 are variable stars. ξ, ♑, τ, are double stars. γ, in Virgo, is a binary system, both the stars of which it is composed are white, and nearly equal in magnitude; a revolution is performed about their common centre of gravity in 708 years. In and near the bosom and right wing of Virgo are no fewer than eighteen nebulæ, some of which are bright in the centre, but, in general, they are of a faint description.

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On Nature's alps I stand,
And see a thousand firmaments beneath!
A thousand systems! as a thousand grains!
How can man's curious spirit not inquire
What are the natives of this world sublime,
Of this so foreign, unterrestrial sphere,
Where mortal, untranslated, never strayed?
Ye borderers on the coasts of bliss! what are you?
A colony from Heaven? or only raised,
By frequent visits from Heaven's neighbouring realms,
To secondary gods, and half divine?—

COMETARY ASTRONOMY.

Tails of Comets. The tail of a comet is a continuation of the envelope, which, after nearly encompassing the hemisphere of the nucleus that is next to the sun, diverges to a greater or less extent in the opposite direction. There are some comets which have no tails, and these, it may be observed, are those whose periods of revolution are short, and in their physical constitution, mere collections of nebulous matter.

Comets have no tails till they approach the sun: at the first the tail is scarcely perceptible; as the comet advances, the tail increases in length, till having wound its way round the solar orb, it diminishes in length as its distance from the sun increases, and, ultimately, disappears. The tail is always turned from the sun, whether the comet be approaching or retreating, and there can be no doubt but that this direction of it is produced by the solar action. According to some philosophers, the rays of light push off the matter of the nebulous envelope, after it has been raised by an approximation to the sun; according to others, the tail is

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produced by an unknown power of repulsion in the sun; others again argue, that the tail is raised by the attraction of the sun, in the same way that the tides of the ocean are raised by the moon; another opinion is, that there is a very dense atmosphere about the sun, in which the very rare matter of a comet's tail ascends as smoke does in the terrestrial atmosphere; others again attempt to explain the phenomenon on electrical principles, and assert, that just as bodies charged with one kind of electricity repel each other, so the tails of comets have a natural tendency to avoid or fly from the sun.

Without entering on the vain fancies, and unphilosophical reasonings connected with this branch of our subject, we conceive that the first mentioned hypothesis is an approximation to the truth, namely, that the solar rays impel or push off the nebulous matter raised about the nucleus into the form of a streaming tail; this nebulous matter may be supposed to be generated by the unequal action of the sun on the comet,—an unequal action, caused by its varying its distance so much from the centre of its motion; when near its aphelion it would have its physical constitution considerably changed,—vapours and exhalations would be generated and accumulated in great quantities: loaded with these vapours, it would return towards the sun, the influences of which would elevate them to a considerable height above the nucleus; as it approached nearer, and felt more powerfully the solar energy, these accumulated vapours would be impelled in the direction in which light, heat, and other emanations, proceed from the sun, —that is, in right lines; so that if a comet were urging its course direct to the centre, the tail would be in

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exactly the direction in which rays of light proceed from the sun.

But the path of a comet is curvilinear, and this figure of its course will account for a phenomenon observed in its tail, that it is not exactly opposite to the sun, and is also curved at the extremity; the nebulous projection is acted upon by two forces,—the impulsion of the solar rays, and the centrifugal principle by which a comet describes a curvilineal path; it must also be observed, that the nucleus, or more dense part, is especially influenced by the sun's attraction, and that the motion of the tail is governed by the attraction of the nucleus. The curve-like form in the tail is most conspicuous when the comet is nearest the sun, which then moves quickest, consequently, the tail is behind that place to which a line would be directed if drawn from the sun to the comet.

In the tails of some comets there have been observed a dark line, proceeding to some distance from the nucleus; in others, this part has been distinguished for its superior brilliancy; such were the appearances observed in the comets of 1577 and 1618, while the comet of 1744 was observed to assume both of these appearances at different times. Some comets have exhibited corruscations in their tails, which singular appearance was observed in the comets of 1680; that of 1744 sparkled forth, or vibrated luminous particles. These remarkable phenomena might have been owing to physical changes in these bodies, though, doubtless, much is to be attributed to the state of the terrestrial atmosphere.

The tails of comets vary very considerably in their forms,—some straight, others curved, some whose sides

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are parallel, some expanding like a fan, others bifurcated. In the comet of 1744 the tail was divided into two branches, one part was 7° or 8° long, and the other 24°. In the comet of 1769 a stream appeared on each side of the tail, proceeding from the nucleus; the sides of these streams, or lesser tails, were parallel to each other, and between them could be distinguished a darkish space, through which telescopic stars could be distinctly perceived. An appearance, of a similar nature, was observed in the comet of 1811. In the second comet of 1825 the tail was bifid, being divided into two great branches, going off immediately from the nucleus at an angle of 45° with each other. *(See plate, Second comet of* 1825.)

Though the fact of the rotation of comets is uncertain, that of the rotation of the tail is sufficiently proved, at least, in one instance, that of the comet of 1825,—one of the streams of the tail returned to the same form and position within a certain time, from whence it was concluded, that the period of rotation was twenty hours and a half; it may be suggested that this rotation of the tail might also have been accompanied by a rotation of the comet, of which the axis of the tail might have been the axis of revolution.

The tails of comets are hollow, which idea is suggested by the nature of the solar action, which can only affect those parts more immediately exposed to its influence, namely, that hemisphere of the comet which is on the side next the sun, the plane of which may be considered as the frustrum of a hollow cone; the appearance of the tail warrants this conclusion, the upper and under sides are better defined, and more brilliant than the middle,

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as on the supposition of their being hollow, more rays would be seen at the edges where the eye passes through them obliquely, than in the middle, which is the plane of direct vision. In the comet of 1769, just referred to, there can be no doubt but that there were two of these hollow cones,—the one within the other; the outer one very thin, and only seen at the edges, where it appeared as two streams of light.

Often—so much I loved to trace
The secrets of this starry race—
Have I at morn and evening run
Along the lines of radiance spun,
Like webs, between them and the Sun,
Untwisting all the tangled ties
Of light into their different dyes.—
  Nay, oft, so passionate my chase
Of these resplendent heirs of space,
Oft did I follow—lest a ray
  Should scape me in the farthest night—
Some pilgrim *Comet*, on his way
  To visit distant climes of light;
And well remember how I sung
  Exulting out, when on my sight
New worlds of stars, all fresh and young,
As if, just born of darkness, sprung.

" *Loves of the Angels.*"

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A TABLE

OF THE

SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

MAY.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination North.	Equation of time subt. from apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Tuesday	4 35	7 25	2 34	15 9	3 3
7th Monday....	4 24	7 36	2 57	16 53	3 38
13th Sunday	4 14	7 46	3 21	18 27	3 54
19th Saturday ...	4 5	7 55	3 44	19 49	3 48
25th Friday	3 57	8 3	4 8	21 0	3 23

A TABLE

OF THE

TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	0 53	0 23	22 34	19 57	20 48	8 7	18 46
7th.	6 44	23 42	22 39	19 51	20 29	7 44	18 23
13th.	11 31	23 10	22 43	19 44	20 10	7 21	18 0
19th.	16 18	22 46	22 47	19 37	19 50	6 57	17 37
25th.	20 56	22 31	22 52	19 29	19 29	6 34	17 14

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JUNE.

SOLAR PHENOMENA.

The sun
Rose, visiting the earth with light, and heat,
And joy; and seemed as full of youth, and strong
To mount the steep of heaven, as when the stars
Of morning sung to his first dawn, and night
Fled from his face: the spacious sky received
Him blushing as a bride, when on her looked
The bridegroom: and spread out beneath his eye,
Earth smiled.

Pollok's "Course of Time."

The sun attains his greatest northern declination, (23° 27′ 35″,) and also enters Cancer at 29 minutes after 11 of the morning of the 21st. At this time is the mid-day of the north, and the midnight of the south pole, and during several rotations of the earth on its axis the whole of the arctic regions enjoys the presence of the sun, and the antarctic experiences the deepest gloom of the long and dreary night of winter On the verge of the arctic circle the sun, at midnight, conceals for a short space of time one half of his disc, and then re-ascends to pour forth a flood of splendor, over every

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point of the horizon; and on the confines of the antarctic circle, the southern half of its orb, at noon, just emerges above the horizon, and leaves those regions to be illuminated by the bright scintillations of the stars in Argo Navis, Lupus, Crux, Columba, and their splendid companions which circle the southern pole, occasionally diversified with the corruscations of the Aurora Australis.

The following beautiful poem will not require an apology for its insertion in this place.

THE HYMN OF MEMMON'S LYRE.

BY J. A. WADE, AUTHOR OF "SONGS OF THE FLOWERS," ETC.

Fountain of living light to all,
Of melody to me,
Soon as thy morning lustre fall
Is sparkling in the Eastland hall,
My song begins to thee!

Sun! thou great glory of the sky!
Full as thine ears may ring
With the loud orbal minstrelsy,
Oh! list to the sweet melody,
That here for thee I sing!

It is Earth's music, but it thrills
For nothing earthly,—Sun!
Thou'rt scarcely on the orient hills,
But gentle song my fancy fills—
Alas! that e'er 'tis done.

I am all thine—the perfumed sighs
Of morning, mountain heath,
Seek not more fondly the soft skies
That warm them, than my melodies
Send unto thee their breath!

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Oh! it is sweet to hear them wake
And rouse each sleepy string;
At first, low murmuring tones they make,
But bolder, deeper thrills they take—
At thy full rise they sing!

There are some tears upon my wires,
They are not the night dews;
They are a melancholy lyre's,
Jealous of those revolving fires
That hymn the spheral muse.

Sun! do they love thee well as I?
When thou art down the west,
They gaily sparkle o'er the sky,
Not when thy glorious face is nigh
Are they in beauty drest!

How different here!—when thou art gone,
Cold tears and sighs are mine;
With thy last look my joy is done—
With thy first smile my song's begun,
Its theme and music thine!

The night wind oft with tender sigh
Breathes on my heedless strings;
But not a single melody
Forgets its faithfulness to thee,
Not one soft answer sings!

Sometimes with jealous rage he sweeps
Across my dreaming breast,
But, hopeless lover! fondness keeps
Her truth enshrined there, and weeps
And leaves him all unblest!

My Sun-god! love!—my hope! my dream!
Why dost thou let the Moon
Flaunt through thy path in golden beam?
Why does she there so proudly seem
Usurping thy bright noon?

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From my fond thoughts I often start,
And think her light is thine;
How melancholy to the heart,
From a sweet fantasy to part,
And dreams for truth resign.

Oh! that I had the power to climb
O'er the high clouds to thee—
To have thy love through all sweet time—
Not sing the one cold morning chime,
But endless melody!

To bring soft shadows round thy soul
With music's spell at even,
When thou had'st reach'd thy western goal,
And thou wert weary of thy roll
O'er the wide arch of heaven!

But no! 'tis vain Aurora's child,
With his cold senseless grasp,
Inslaves me in this ruin'd wild,
A weeping thing that should have smiled
In thy more gentle clasp!

Farewell!—thou passest quickly on
To give dark regions light,
Their rosy smiles have just begun—
Farewell! my Morning Hymn is done—
Come to me Tears and Night.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter,	5th day	at 59 min.	after 2 afternoon.
Full Moon,	13th	44	7 morning.
Last Quarter,	21st	14	11
New Moon,	28th	58	6

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Conjunctions of the Moon with the Planets and Stars.

June 5th, with Saturn .....at 4 morning.
10th, ... γ in Libra ..... 9 evening.
15th, ... o in Sagittarius... 1 morning.
18th, ... Uranus..... 1
21st, ... Jupiter..... 4
21st, ... Mars..,..... 10
24th, ... ξ in Cetus 3
27th, ... Venus ..... 5 afternoon.
27th, ... Mercury ..... 7 evening.

PHENOMENA PLANETARUM.

Mercury at his greatest elongation on the 1st as a morning star, angle of elongation 24° 19′. Greatest south latitude on the 5th. Ascending node on the 24th. In conjunction with Venus at 5 in the morning of the 26th, difference in declination 21′. Perihelion on the 29th.

Venus in conjunction with 2 ω in Taurus on the 7th, difference of latitude 2′. Ascending node on the 27th. In conjunction with H in Gemini on the 28th, difference of latitude 13′.

Phases of Venus.

The proportions of the light and dark phases of Venus are as follow:—

June 1st.—Illuminated disc = 11.5786
Dark part = 0.4214

Mars attains his greatest south latitude on the 7th. In perihelion on the 30th.

The Asteroids.

		Hrs. Min.		
Vesta,	1st day. Right Ascension,	9 23	N. Declin. 21°	2′
	9th	9 35	20	1
	17th	9 48	18	55
	25th	10 1	17	44

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			Hrs.	Min.			
Juno,	1st day.	Right Ascension,	10	20	N. Declin.	11°	0′
	9th	.....	10	28	.....	10	34
	17th	.....	10	37	.....	10	2
	25th	.....	10	46	.....	9	25
Pallas,	1st	.....	23	42	.....	6	26
	9th	.....	23	48	.....	6	41
	17th	.....	23	54	.....	6	50
	25th	.....	23	59	.....	6	51
Ceres,	1st	.....	1	40	.....	1	20
	9th	.....	1	50	.....	2	12
	17th	.....	2	0	.....	2	59
	25th	.....	2	10	.....	3	42

Jupiter in quadrature at 15 minutes after 2 of the afternoon of the 18th.

Eclipses of the Satellites of Jupiter.

IMMERSIONS.

First satellite, 14th day, at 1 min. 13 sec. after 2 morning
Second satellite, 20th .....30.... 1..... 2

FORM OF SATURN'S RING.

June 9th.—Semi-transverse axis —— 40″.28
Semi-conjugate axis —— 3 .94

Uranus, on the 1st day, two degrees and a half west of three small stars (42, 44, and 45) in the tail of Capricornus.

Sphere of the Fixed Stars.

Positions of the principal constellations on the 1st day at 11 in the evening.

On the Meridian. Lupus close to the southern horizon, Libra, Serpens, Corona Borealis, Boötes, Draco near the zenith, Ursa Minor, Tarandus, Custos Messium, Camelopardalis, and Perseus on the verge of the northern horizon. Hercules and Ophiuchus are between

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the zenith and S. S. E. ½ E. point of the horizon; between Ophiuchus and the meridian is Scorpio. Aquila and Antinous, E. S. E. Lyra, Vulpecula et Anser, Delphinus, and Equuleus, due east. The head of Draco, Cygnus, and Pegasus, are between the zenith and E. N. E. Andromeda, N. E. Cassiopeia, N. N. E. Ursa Major, the Lynx, Castor and Pollux, N.W., the latter near the horizon. Centaurus, Corvus, Crater, and Sextans in the horizon from the south to the west. Boötes between Virgo and the Zenith, the latter extending over a large portion of the sky in the S. W.

Telescopic Objects.

The following telescopic objects will be in favorable positions for observation during the month.

Hercules. In the girdle of Hercules, between two stars of the eighth magnitude, is a nebula round and bright in its centre; between the knee and left leg is another beautiful nebula 5′ in diameter, surrounded with great nebulosity; near κ is another bright nebula, —each of these is resolvable into stars. In the breast of Hercules is a planetary nebula; α, the star in the head, is a double star—the large star red, the small of a bluish green color; this is also a variable star; period of variation 60½ days. δ is a double star, the largest of which is white, the small reddish white. γ, κ, ρ, η, and 70 are also double stars. The most interesting object in this constellation is ζ, which is a binary system, the large star of a beautiful bluish white, and the small of a fine ash color:—these stars revolve about their centre of gravity. On the 18th of July, 1782, the interval between the two stars was one half the diameter

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of the smaller one, with a telescopic power of 460. In 1802 Sir William Herschel could no longer perceive the small star; but in a clear night in September of that year, with the same telescopic power as that before used, the apparent disc seemed to be a little lengthened in one direction. With the ten-feet telescope, and a power of 600, it had the appearance of a lengthened, or rather wedge-formed, star; this celebrated astronomer was convinced that not more than three-eighths of the apparent diameter of the small star was wanting to a complete occultation.

O Majestic Night!
Nature's great ancestor! Day's elder born!
And fated to survive the transient sun!
By mortals and immortals seen with awe!
A starry crown thy raven brow adorns,
An azure zone thy waist; clouds in heaven's loom
Wrought through varieties of shape and shade,
In ample folds of drapery divine,
Thy flowing mantle form, and, heaven throughout,
Voluminously pour thy pompous train.

COMETARY ASTRONOMY.

Magnitudes of Comets. The apparent magnitudes of comets not only depend on their absolute bulk, but also on their distances from the earth; some have appeared whose brightness did not exceed that of very minute stars, others have shone forth as stars of the first magnitude. That which appeared in the reign of Nero is described as not inferior in apparent magnitude to the sun. Hevelius observed a comet in 1652, which he describes as not less than the moon, though it was

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deficient in splendour, having a pale dim light, and a dismal aspect. The comet of 1577 had an apparent diameter of 25′ or 26′, a magnitude nearly equal to that of the moon when in apogee. The diameter of the head of the comet of 1769 was about a degree, and its nucleus about 4′; that of 1807 had its envelope 6′ in diameter, and the one that appeared in 1811 exceeded that of 1807 in apparent magnitude.

From the apparent angles under which comets are seen, being ascertained, and their distances determined, their true magnitudes are obtained. The

	Diameter.
Comet of the year 1798 was	27 miles
1805	30
1799	373
1811	428
1807	538

The second comet of 1811 possessed a nucleus of prodigious size, being no less than 2637 miles in diameter, or one-third of that of the earth. These diameters are the results of very careful measurements in the hands of good observers; which, however, very often vary, as determined by astronomers, who have measured the same body:—thus in the comet of 1811, Herschel computed the diameter to be the amount just stated, namely, 2637 miles; Schroëter, a celebrated astronomer, differed very widely from this result, and estimated the diameter to be only 570 miles. The great magnitude assigned to some comets, may be accounted for from the coma surrounding the nucleus, being measured instead of the nucleus; this would make a wonderful difference in the results. In this respect, also, comets differ from planets,—the edge of a planetary disc is

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sharply defined, so that a micrometer may almost unerringly determine the angle it subtends; on the contrary, a cometary disc, from the nebulous matter through which it is seen, is generally rough and indistinct. Radiation, also, will cause the nucleus of a comet to appear larger than it really is, which is evident from the fact, that stars seen through the nebulous matter appear larger, though not brighter than when escaped from the vapoury medium. The comet of Halley was calculated to be about the magnitude of the moon, that of 1680 was supposed to be ten times as large as the moon; those comets which present merely a mass of nebulosity without a nucleus, vary in their sizes from that of 1804, which was 5000 miles in diameter, to that of the Encke comet, which, on its last return in 1828, was found to be 76000 miles in diameter; but it must be remembered, that these last mentioned contain very little matter in proportion to their magnitudes, being probably of not much greater density than the tails of some comets: this may be inferred from their pellucid nature,—*the smallest stars being distinctly visible through every part of them.*

The envelope that surrounds the nucleus, varies in depth considerably, and appears but in few instances to unite with the nucleus: the depth of the envelope of the comet of 1811 amounted, when at its maximum, to no less than 25,000 miles, and its distance from the centre of the nucleus 30,000 miles; the depth of the envelope of the comet of 1799 was estimated at nearly the same quantity.

The apparent lengths of the tails of comets vary from the smallest possible dimensions to that of the comet of

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1618 and 1680, the former of which was more than a 100° in length; it must, however, be observed, that the tail of a comet will, at the same time, at different places, appear of different lengths, according to the states of the atmosphere at the different places of observation: there will also be a difference in the eyes of spectators at the same place; hence the disagreement between the estimates of astronomers:—at the time that the tail of the comet of 1680 was said to be 90°, as observed at London, it was stated to be 120° at Constantinople. It may be concluded that when the tail of a comet appears of considerable length, that it is then not very remote from the earth.

Comets may appear to be destitute of tails from their positions, relative to the earth and sun; if a comet approaches the sun in the direction of the earth, the axis of the tail is then coincident with the line of vision, consequently it appears with only a coma surrounding the nucleus without any divergency, and in every case where the line of vision does not pass, so as to form a right angle with the axis of the tail, it must appear shorter than it really is.

As the apparent lengths of these streams of light are in some instances very great, so are also their true lengths:—that of the comet of 1744 was calculated to be 20 millions of miles in extent, and that of 1769, a tail of 40 millions; the tail of the great comet of 1680 was computed to be no less than 100 millions of miles, and the second comet of 1811 had a vast projecting luminosity extending 132 millions of miles,—a length so vast as almost to overpower the faculties with astonishment,—for supposing the nucleus of this comet to be

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placed on the orb of the sun, and its tail in the plane of the orbits of the planets—it would traverse across the orbits of Mercury, Venus, the Earth, and terminate only within 12 millions of miles of the orbit of Mars!

Behold! amidst yon wilderness of stars,
Is one unlike the rest—misshapen—red
And wand'ring from its golden course. It seems
Some spirit from the nether world hath 'scaped
Heaven's vigilance, and mixed with purer forms
To work there deeds of evil.
What might not this portend? changes, and acts
Of fear, and bloody massacres—perchance
Some sudden end to this fair formed creation—
Or half the globe made desolate. Behold!
It glares—how like an omen!
But away such thoughts,
Lest I, bewildered by my phantasy,
Dream of dark ills to come, and dare believe
(Shutting my eyes against the gracious light
Now given) that the *Eternal Power* can sleep
While mischief walks the world.

Stars teach, as well as shine. At Nature's birth
Thus their commission ran,—"Be kind to man."
Where art thou, poor benighted traveller?
The stars will light thee, though the moon should fail.
Where art thou, more benighted! more astray!
In ways immortal? the stars call thee back,
And, if obeyed their counsel, set thee right.

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A TABLE

OF THE

SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

JUNE.	SUN		Right ascension in time.	Declination North.	Equation of time, subt. from appt. time.
	rises.	sets.			
	h. m.	h. m.	h. m.	° ′	m. s.
1st Friday.....	3 54	8 6	4 37	22 6	2 30
7th Thursday ..	3 48	8 12	5 2	22 47	1 29
13th Wednesday.	3 45	8 15	5 26	23 14	0 19 add
19th Tuesday....	3 43	8 17	5 51	23 26	0 56
25th Monday....	3 43	8 17	6 16	23 24	2 14

A TABLE

OF THE

TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	2 38	22 24	22 58	19 19	19 4	6 6	16 44
7th.	7 56	22 27	23 4	19 11	18 43	5 42	16 19
13th.	12 33	22 38	23 10	19 2	18 20	5 19	15 54
19th.	17 13	22 57	23 16	18 52	17 58	4 55	15 29
25th.	22 9	23 24	23 23	18 43	17 34	4 32	15 4

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JULY.

Each flower the dews have lightly wet,
And in the sky the stars are met,
And on the wave is deeper blue,
And on the leaf a browner hue,
And in the heaven that clear obscure,
So softly dark, and darkly pure,
Which follows the decline of day,
As twilight melts beneath the moon away.

Byron.

SOLAR PHENOMENA.

The Solar Spectrum. Had two observers, one situated in Mercury, and the other in Jupiter, studied the prismatic spectrum of the sun by the same instruments, and with the same sagacity as Newton, it is demonstrable, that they would have obtained very different results. On account of the apparent magnitude of the sun in Mercury, the observer there would obtain a spectrum entirely without *green*, having *red*, *orange*, and *yellow*, at one end, the *white* in the middle, and terminated at the other end with *blue* and *violet*. The observer in Jupiter would, on the contrary, have obtained a spectrum in which the colours were much more condensed. On the planet Saturn, a spectrum exactly

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similar would have been obtained, notwithstanding the greater diminution of the sun's apparent diameter.

The spectrum obtained in Jupiter and Saturn, is the only one whose analysis is complete, as it is incapable of having its character altered by any farther diminution of the sun's diameter.

A rainbow formed in summer, when the sun's diameter is least, must have its colours more condensed, and homogeneous than in winter, when the size of his disc is a maximum, and when the upper or under limb of the sun is eclipsed,—a rainbow formed at that time will lose entirely the yellow rays, and have the green and red in perfect contact. For the same reason, a rainbow, formed in Venus, and Mercury, will be destitute of green rays, and have a brilliant bow of white light, separating two coloured arches, while in Mars, Jupiter, Saturn, and Uranus, the bow will exhibit only four homogeneous colours.

Brewster's Newton.

The moon is up, and yet it is not night—
Sun-set divides the sky with her—a sea
Of glory streams along the Alpine height
Of blue Friuli's mountains; heaven is free
From clouds, but of all colors seems to be
Melted to one vast Iris of the west,
Where the day joins the past eternity;
While on the other hand, meek Dian's crest
Floats through the azure air—an island of the blest!

A single star is at her side, and reigns
With her o'er half the lovely heaven; but still
Yon sunny sea heaves brightly, and remains
Rolled o'er the peak of the far Rhætian hill,

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As Day and Night contending were, until
Nature reclaimed her order:—gently flows
The deep-dyed Brenta, where their hues instil
The odorous purple of a new-born rose,
Which streams upon her stream, and glass'd within it glows.

Fill'd with the face of heaven, which, from afar,
Comes down upon the waters; all its hues,
From the rich sunset, to the rising star,—
Their magical variety diffuse.
And now they change; a paler shadow strews
Its mantle o'er the mountains; parting day
Dies like the dolphin, whom each pang imbues
With a new color, as it gasps away,
The last still loveliest, 'tis gone—and all is gray.

Childe Harold's Pilgrimage.

The earth will be in aphelion at 7 in the morning of the 1st of this month. The sun enters Leo at 22 min. after 10 of the night of the 22d.

SOLAR ECLIPSE.

On the 27th the sun will be eclipsed visible at Greenwich. The following are the particulars:—

	Hrs.	Min.
Beginning of the Eclipse	2	$3\frac{1}{4}$
Greatest Obscuration	2	$15\frac{1}{2}$
Visible Conjunction	2	$16\frac{1}{10}$
End of the Eclipse	2	$28\frac{1}{2}$

Digits eclipsed 0° $12\frac{1}{2}'$ on the sun's southern limb.

The following diagram will illustrate the part of the sun's disc that will be eclipsed, and its appearance at the time of the greatest obscuration:—

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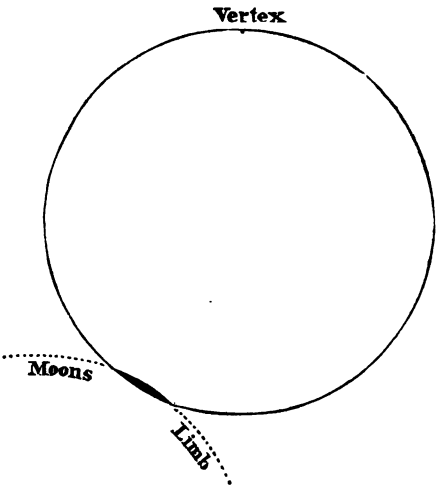

This eclipse will be remarkable for the very minute portion of it, that will be visible to the British Isles; at Greenwich, only 1-58th part of the solar diameter will be obscured. It will be considerable to a great portion of North and South America.

The following were the observations at Deptford, of the Lunar Eclipse of 26th February last. (*See T. T. Ast. Occ. February*, 1831).

The moon's upper limb was indistinctly perceived at 5 hrs. 45 min. clock time, above a low bank of clouds, over which was diffused a slight blue haze. 5 hrs. 55 min. the shadow of the earth quite clear of Mare Crisium, and Mare Humorum: the eclipsed part of the disc was not visible. 6 hrs. 5 min. the shadow passed

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the centre of Tycho, and the northern part of Mare Fecunditatis. 6 hrs. 10 min. the eclipsed limb dully visible, and of a neutral color; the edge of the shadow more defined than when first observed, and the penumbra, about the breadth of Mare Crisium. 6 hrs. 15 min. the shadow passed through the southern part of Mare Fecunditatis. 6 hrs. 25 min. the defined edge of the shadow left the moon; the penumbra lingered for several minutes afterwards, and exhibited a dull appearance on the western limb. A halo of unusual brilliancy surrounded the moon at 9 hrs. There will be no lunar eclipse in the present year.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter, 4th day at 33 min. after 11 night.
Full Moon, 12th 55 10
Last Quarter, 20th 2 10
New Moon, 27th ,... 55 ..... 1 afternoon.

Conjunctions of the Moon with the Planets and Stars.

July 2d, with Saturn .....at 2 afternoon.
15th, ... Uranus 5
18th, ... Jupiter ..... noon.
21st, ... Mars ..... 5 morning.
27th, ... Venus ..... 2 afternoon.
29th, ... Mercury ..... 5 morning.
30th, ... Saturn 4

PHENOMENA PLANETARUM.

Mercury, in his superior conjunction with the sun at 15 min. after 8 of the morning of the 3d of this month. Greatest north latitude on the 9th. In conjunction with Regulus at 10 in the evening of the 27th, difference of latitude 15'.

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Venus, in her superior conjunction at 45 min. after 8 of the morning of the 27th. In perihelion on the 30th.

Phases of Venus.

The following are the proportions of the light and dark phases of Venus :—

July 1st.—Illuminated disc = 11.907
Dark part .... = 0.093

Mars in conjunction with o in Pisces, at 8 in the morning of the 9th.

The Asteroids.

		Hrs.	Min.			
Vesta,	3d day. Right Ascension	10	15.	N. Declin.	16°	29′
	11th	10	28.	.....	15	10
	19th	10	42.	.....	13	47
	27th	10	56.	.....	12	20
Juno,	3d	10	55.	.....	8	43
	11th	11	5.	.....	7	58
	19th	11	15.	.....	7	9
	27th	11	25.	.....	6	18
Pallas,	3d	0	3.	.....	6	44
	11th	0	6.	.....	6	27
	19th	0	8.	.....	5	58
	27th	0	9.	.....	5	18
Ceres,	3d	2	19.	.....	4	20
	11th	2	27.	.....	4	54
	19th	2	36.	.....	5	22
	27th	2	43.	.....	5	44

Jupiter stationary on the 17th.

Eclipses of the Satellites of Jupiter.

IMMERSIONS.

First Satellite,	7th day at	10 min.	47 sec.	after	2 morning
	22d	27	1		midnight
	30th	21	3		2 morning
Second Satellite,	2d	47	23		1
	26th	54	52		10 night

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EMERSION.

Third Satellite, 26th day at 45 min. 2 sec. after 1 morning.

IMMERSION.

Fourth Satellite, 10th day at 29 min. 13 sec. after midnight.

FORM OF SATURN'S RING.

July 19th.—Semi-transverse axis —— 37".96
Semi-conjugate axis —— 2 .69

Uranus in nearly the same position as last month.

Sphere of the Fixed Stars.

Positions of the principal constellations, at 11 in the evening of the 1st of the month.

On the meridian. Scorpio near the southern horizon. Above Scorpio are Serpens, Ophiuchus, Hercules, and the head of Draco in the Zenith. North of the Zenith are Tarandus, Custos Messium, Camelopardalis, and Auriga; the latter in the horizon.

Perseus, N. N. E. Andromeda, N.E. Pegasus, E. by N. Cassiopeia, N.E. by N. Cygnus, East. Lyra, Delphinus, Equuleus and Aquarius, E. S. E. Aquila, Antinous, and the head of Capricornus, S. E. by E. Taurus Poniatowski, Scutum Sobieski and Sagittarius, S. S. E. Leo and Leo minor, W. N. W., above which is Ursa Major. Coma Berenices, West. Boötes and Virgo, W. S. W. Corona Borealis, Serpens and Libra, S. S. W.

Telescopic Objects.

Libra. In this zodiacal constellation, α, ζ and ι are double stars,—the largest of ι is white, and the small star dusky red. ξ is a triple star,—with inferior telescopes this appears only a double star, the largest of which is very white; this is, however, itself a double

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star. ε is a beautiful double-double star, or a double star, each star being itself a double star; the first set consists of stars that are very unequal, the largest is white, and the smallest reddish; the second set are white and equal.

North of δ is a nebula.

κ is supposed to be a variable star.

Scorpio. In this constellation β and ν are double stars; near ν is a multiple star; near to the red star Antares is a mass of small stars; σ and 19 point to a nebula. In this constellation are some remarkable nebulæ, two of which are like comets, with brilliant centres. Scorpio is on the borders of the Via Lactea, which Herschel considered, as a very extensive branching congeries of many millions of stars; that probably it owes its origin to several remarkably large, as well as pretty closely scattered small stars, that may have drawn together the rest; also that there are many parts of the Via Lactea where the stars are drawing towards secondary centres, and may, in time, separate into different clusters. He also imagined, that there are some portions of the Via Lactea which have suffered greater ravages than others, and particularly that part of it in the body of Scorpio, where there is a large opening or hole, about four degrees broad, which is almost destitute of stars; and that the stars which once filled this vacancy is a rich cluster of small stars, just upon the western border of the opening.

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COMETARY ASTRONOMY.

Density of Comets. There are the strongest reasons for believing that the density of that part which is termed the nucleus, or solid body of a comet, is very inconsiderable, and contains but little matter in proportion to its bulk. In this respect they differ most widely from the planets, some of which are bodies of great density,—the earth is four and a half times more dense than the sun, and Mercury twice as dense as the earth; the higher planets are also dense bodies, though not so much so as the earth and the planets within its orbit. This is evident from their mutual influence on each other,—Jupiter and Saturn, when in conjunction, alternately retard and accelerate each others motions. When it is considered what a vast number of comets are constantly traversing the system, it will be evident that they are bodies of very little density, or they would, long before this, have had some influence on the planetary system, by deranging their motions when passing in their neighbourhood; this, however, has not been the case,—the comet of 1770 passed through the system of Jupiter without causing the least perceptible derangement of the planes of motion, or periods of revolution of the satellites; the same comet passed at no very great distance from our earth; in fact, it approached nearer than any other that has been observed: this close approximation furnished data for computing the limit of its mass; if the quantity of matter in the comet had been equal to that in the earth, it would have shortened the length of our year by one-ninth of a day: now this

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effect was not produced, nor, indeed, was any perceptible perturbation detected; the solar tables, for that year, prove that no alteration could have taken place exceeding 2″, from hence it followed that the mass of this comet was less than $\frac{1}{5000}$th part of the mass of the earth.

It will readily be admitted, that if the solid part, or nucleus of a comet, is of little density, that of the tail must be much less so, through which the smallest stars are visible without much diminution of their light; this fact alone sufficiently attests its highly attenuated nature. Newton calculated that if all the matter, constituting the largest tail of any comet, were to be compressed to the same density with our atmosphere, it would occupy no more than the space of a cubic inch! This statement may, to some, appear incredible; the truth of it, however, stands upon as firm a basis as any of the most universally received in the science of astronomy. The statements of astronomical science are frequently considered, by the uninformed, as visionary; to specify one,—the distances of the planets from the sun, and from one another: many are unable to conceive of how the distance of an object can be determined, to which the standard of measurement cannot be extended. But astronomers have this measuring rod,—the earth's diameter, which they extend to the sun and planets, and with it measure the millions of miles that separate our globe from the neighbouring bodies; when this fails, they take a longer line of comparison,—the diameter of the earth's orbit, and attempt to measure the wondrous space that separates our sun from the nearest fixed star:

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not till this measure fails does the astronomer yield his mind to the influence of conjecture. In the calculation just referred to, relative to the matter of a comet's tail, it can be demonstrated, that if a cubic inch of air be elevated to the height of the semi-diameter of the earth, it would diffuse itself over the planetary regions, and extend beyond the orb of Saturn.

Who marshals this bright host? enrolls their names,
Appoints their post, their marches, and returns,
Punctual at stated periods? who disbands
These veteran troops, their final duty done,
If e'er disbanded?—He, whose potent word,
Like the loud trumpet, levied first their powers
In Night's inglorious empire, where they slept
In beds of darkness; armed them with fierce flames;
Arranged, and disciplined, and clothed in gold,
And called them out of Chaos.

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A TABLE

OF THE

SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

JULY.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination North.	Equation of time add to apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Sunday.....	3 45	8 15	6 41	23 6	3 28
7th Saturday ...	3 48	8 12	7 6	22 35	4 32
13th Friday	3 54	8 6	7 30	21 49	5 22
19th Thursday ..	4 0	8 0	7 55	20 49	5 55
25th Wednesday.	4 8	7 52	8 18	19 37	6 9

A TABLE

OF THE

TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	3 16	23 56	23 30	18 33	17 11	4 9	14 38
7th.	8 5	0 22	23 38	18 24	16 47	3 46	14 13
13th.	12 49	0 50	23 45	18 15	16 24	3 24	13 48
19th.	17 20	1 11	23 53	18 5	16 0	3 2	13 23
25th.	22 52	1 26	Noon.	17 56	15 36	2 40	12 58

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AUGUST.

The soul that sees Him, or receives sublimed
New faculties, or learns, at least, t' employ,
More worthily, the powers she owned before,
Discerns in all things what, with stupid gaze
Of ignorance, till then she overlooked,—
A ray of heavenly light, gilding all forms
Terrestrial in the vast and the minute;
The unambiguous footsteps of the God,
Who gives its lustre to an insect's wing,
And wheels his throne upon the rolling worlds.
Much conversant with Heaven, she often holds
With those fair ministers of light to man,
That fill the skies nightly with silent pomp,
Sweet conference.

Cowper.

SOLAR PHENOMENA.

The sun enters Virgo at 54 min. after 4 of the morning of the 23rd of this month.

The sun and all the planets move round the common centre of gravity of the system: which centre is nearly in the centre of the sun. This motion changes into epicycloids, the ellipses of the planets, and comets which revolve round the sun.

A body which weighs one pound at the equator of

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the earth, would, if removed to the equator of the sun, weigh 27.9 pounds. The space passed through by descending bodies, in the first second of time, in the latitude of London, is 16.095 feet: on the sun, bodies fall with a velocity of 334.65 feet in the first second of time.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter, 3rd day at 49 min. after 10 morning.
Full Moon, 11th ..... 27 ..... 2 afternoon.
Last Quarter, 19th ..... 33 ..... 6 morning.
New Moon, 25th ..... 44 ..... 9 evening.

Conjunctions of the Moon with the Planets and Stars.

August 11th, with Uranus.....at 10 morning.
14th, ... Jupiter..... 4 afternoon.
18th, ... Mars..... 6 evening.
19th, ... γ in Taurus 8
20th, ... Aldebaran ..... 3 morning.
26th, ... Venus 11
26th, ... Saturn ..... 7 evening.
27th, ... Mercury ..... 4 morning.
31st, ... γ in Libra ..... 5 afternoon.

PHENOMENA PLANETARUM.

Mercury in conjunction with ρ, in Leo, on the 1st of this month, difference of latitude 4'. Descending node on the 2nd. In conjunction with Saturn on the 11th. Greatest elongation, as an evening star, on the 12th, angular distance 27° 26'. Stationary on the 26th.

A body which weighs one pound at the equator of the earth, would, if removed to the equator of Mercury, weigh 1.03 pounds.

Venus attains her greatest north latitude on the 21st. In conjunction with χ, in Leo, on the 26th, difference

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of latitude 4′; with Saturn at 7 in the morning of the 31st, difference of declination 32′.

Phases of Venus.

The following are the proportions of the light and dark phases of this planet, from which it will be perceived that nearly the whole of the disc, relative to the earth, is illuminated:

August 1st.—Illuminated disc = 11.9999
Dark part..... = 0.0001

A body which weighs one pound at the equator of the earth, would, if removed to the equator of Venus, weigh only 0.98 pounds.

Mars in quadrature at 15 min. after noon of the 3rd day.

A body which weighs one pound at the equator of the earth, would, if removed to the equator of Mars, weigh only one-third of a pound.

The Asteroids.

			Hrs.	Min.			
Vesta,	4th day.	Right Ascension,	11	10.	N. Declin.	10°	51′
	12th	.....	11	25.	.....	9	19
	20th	.....	11	39.	.....	7	45
	28th	.....	11	53.	.....	6	9
Juno,	4th	.....	11	36.	.....	5	25
	12th	.....	11	46.	.....	4	30
	20th	.....	11	57.	.....	3	33
	28th	.....	12	8.	.....	2	36
Pallas,	4th	.....	0	9.	.....	4	24
	12th	.....	0	7.	.....	3	15
	20th	.....	0	4.	.....	1	53
	28th	.....	0	0.	.....	0	17
Ceres,	4th	.....	2	50.	.....	6	1
	12th	.....	2	55.	.....	6	12
	20th	.....	3	0.	.....	6	17
	28th	.....	3	3.	.....	6	16

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Jupiter on the 1st, within 1° 39′ of the equinoctial colure, near the star numbered 513.

A body which weighs one pound at the equator of the earth, would, if removed to the equator of Jupiter, weigh 2.716 pounds. But this must be diminished a ninth part, on account of the centrifugal force due to each planet.

Eclipses of the Satellites of Jupiter.

IMMERSIONS.

First satellite,	7th day,	at 43 min.	40 sec.	after 10 night.
	14th	37	57	midnight.
	22nd	32	20	2 morning.
	23rd	1	0	9 evening.
	30th	55	35	10 night.
Second satellite,	3rd	31	11	1 morning.
	27th	37	43	10 night.
Third satellite,	2nd	33	52	2 morning.

It has been generally supposed, that it is impossible to observe the eclipses of the satellites of Jupiter, at sea, with sufficient precision, to determine the longitude of a ship; from experience, however, it appears that the contrary is the case. From the statement of Lieutenant Peter Lecount, R. N., it seems that, in moderate weather, these phenomena can be observed by any one who has been accustomed to use a telescope at sea, and that the three-feet glasses, with a power of about 45, in common use, on board men-of-war, are the most proper for the purpose.

As it is very troublesome to follow the satellite when the ship has much motion, Mr. L. recommends the observer to limit his attention to the times when the vessel is at the extremity of her roll or pitch. An attendant, with a watch, should be at hand to note the

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times when the observer is *certain that he does see* the satellite, previous to immersion, and *certain that he does not see it*, after immersion, the mean of which is to be taken for the true time. A similar method must be adopted for emersion. With common care, Mr. L. thinks that these observations should give the longitude within fifteen or twenty miles; and those made by himself, on board the Conqueror, 74, for six months, at St. Helena, and during the passage home, came much nearer to the truth.

Saturn in conjunction with σ, in Leo, on the 25th, difference of latitude 10′.

FORM OF SATURN'S RING.

August 28th.—Semi-transverse axis —— 36″.83.
Semi-conjugate axis —— 1 .20.

A body which weighs one pound at the equator of the earth, would, if removed to the equator of Saturn, weigh 1.01 pounds.

Uranus in opposition to the sun at 5 in the morning of the 9th; the apparent diameter at this time, though at its nearest to the earth, is scarcely 4″. It is remarkable that this planet was observed as far back as the year 1690. It was seen three times by Flamstead, once by Bradley, once by Mayer, and eleven times by Lemonnier: not one of whom suspected it to be a planet. This brilliant discovery was reserved for Herschel.

For the positions of the comet of Biela in this month, see "Cometary Astronomy," in the *Ast. Occ. for October.*

Sphere of the Fixed Stars.

Altitudes and positions of the fixed stars on the 1st of the month, at 10 in the evening.

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Cassiopeia, 45° N.E. Auriga, 10° N.N.E. Perseus, 21° N.E. by N. Andromeda, 30° E.N.E. Aries, 8° E.N.E. Pisces, East. Pegasus, 30° E. by S. Cygnus, 73° E. by S. Aquarius, 25° S.E. Delphinus, 48° S.E. by S. Capricornus, 15° S.S.E. Aquila et Antinous, 40° S. by E. Sagittarius, South. Lyra, 76° S.S.W. Ophiucus, 40° S.W. by S. Scorpio, S.W. by S. early in the horizon. Hercules, 60° S.W. by S. Libra, S.W. by W. Corona, 50° W. by S. Boötes, 36° W. Virgo in the western horizon. Caput Draconis, 76° W.N.W. Coma Berenices, 15° N.W. by W. Ursa Major, 30° N.W. by N. Ursa Minor, 56° N.N.W. Lynx, 15° North.

TELESCOPIC OBJECTS.

Lyra. Near Vega, (α in Lyra) is a very faint, and small star. Between γ and β is a round mottled nebula. β is a variable star, maximum and minimum brightness, third and fifth magnitudes; a series of observations have lately been completed with this star, which determined its periodical variation to be 6 days, 10 hrs. 40 min. instead of 6 days, 9 hrs. as was formerly supposed; there is, however, a probability, that the deviation of its maximum, as well as of its minimum brightness, is somewhat irregular. ε in Lyra, with a telescope of low power, appears only double; with a higher power, each star is seen to be double; under peculiarly favourable circumstances, a fifth star is visible—constituting ε in Lyra, a quintuple star. (*See plate* 1, *p.* 16.)

'Tis midnight—deep silence reigns around,
And awful is the solemn hour to sleepless
Impious men; but grateful to the pious
And the good. This serious time calls forth the

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Contemplative soul to view the starry
Realms above, and commune with its God.
How lovely, glorious, is the vault of Heaven,
Deck'd with the glitt'ring host: and Cynthia bright,
Walking her nightly path, in silence sweet.
How wond'rous are thy works, Thou Great First Cause,
E'en to the view confined, of earthly wight!
More wonderous far to sight seraphic,
Who sees ten thousand worlds unknown to man.
Can there be then a being so perverse,
(With mind eclipsed by vanity, conceit,
And love of vulgar gaze,) to close his eyes
Against the Author of great Nature's works,
And say there is no God?
But 'tis not thus with astronomic sage,
Whose heart is humbled by revealed truth,
And dedicates his thoughts to Heaven. He sees
In all those lovely orbs the Great Artificer,
And in the music of their annual course
He hears the voice of God; and though the night
Of death may shut his momentary view
From Heaven above, the Christian wakes,
In realms of light, to everlasting joy.

Rev. W. Munsey.

COMETARY ASTRONOMY.

Motions of Comets. The motions of comets through the system may be divided into apparent and true, being compounded of the earth's motion, and the motion of the comet, each in its respective orbit. When the two bodies are proceeding in different directions, the apparent motion of the comet will exceed its true motion; when moving the same way, its apparent motion will be less than its absolute motion. The apparent velocity has, in some instances, been very great, the comet of 1770 described an arc of 50° in 24 hours; the apparent

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swiftness will also be augmented in proportion to the proximity of a comet to the earth, for the arc through which it moves, in any given time, like all other objects, appears larger the nearer it is to the eye.

With respect to the true motions of comets, it may be said, in general, that when at their perihelion, or nearest the sun, they move swiftest, and when at their aphelion, or farthest from the sun, they move slowest. The velocity of some, when at their perihelion, is almost inconceivably great: the comet of 1680, which approached within a very short space of the solar orb, so very near, indeed, that it may be said that its place of perihelion was in the globe of the sun,—this comet went half round the sun in ten hours!

A striking illustration is afforded of the inequality of the motions of cometary bodies, when at these opposite points of their orbits, by the comet of 1811: the period of which, as computed by Lemaur, is 4237 years; the time taken up in traversing the half of its ellipse nearer the sun is only 775 years; the other 3462 years of its revolution being employed in traversing the most remote half.

The velocity of the comet of 1680 has been referred to: its middle distance from the sun is more than 5000 millions of miles, and its greatest distance may be stated as twice as much, (for its nearest is only a 20,000th part of its most remote distance,) so that in its whole revolution it is subject to the greatest extremes. It sees the sun's orb as a vast globe filling the heavens, and, in a lapse of 287 years, it beholds it as dwindled to a point! It bathes its glowing globe in the full effulgence of the solar light, and gradually retreats, till that light almost sinks into the subdued brilliancy of sur-

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rounding suns! It whirls round the sun with tremendous rapidity, and, by degrees, lags in its pace, and, comparatively, creeps in its path! The centrifugal and the centripetal forces are, at one period of the revolution, so intense, that it may be conceived to be possible that one principle would be sacrificed to the other, and the comet either rush to the sun, or fly off never to return! At the further extremity of its long travel, these forces are so exhausted, that the wanderer glides slowly along its course with dimmed splendor, destitute of its brilliant train, and seems abandoned, in the vast fields of ether, to the random attraction of any neighbouring sun, yet these forces are so adjusted, (though a cannon ball would not reach the aphelion of the comet of 1680 in less than 2260 years,) that the comet can neither rush to the sun when near him, nor leave him when most remote, but is bound to his glorious chariot, and reined in ultimately, to return in its appointed period of time.

To ascertain the orbit of a comet is the most difficult problem in astronomy; chiefly because no comet is visible through the whole of its course, and rarely seen in those points of its orbit, which enable us, as with the planets, to determine, with accuracy, the figure of the path described. Comets are seldom seen either in opposition, conjunction, or the plane of the ecliptic, which latter being the place of the node, is the most important particular for calculating the elements.

According to the relation which the centrifugal and centripetal forces bear to each other, will be the nature of the path of a moving body, a circle, an ellipse, a parabola, or a hyperbola; if the velocity of the earth were

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about 101,000 feet per second, the orbit would be circular; its actual velocity, when nearest the sun, is 102,300 feet per second, by reason of which, it is constrained to move in an ellipse; were the projectile force increased to 144,700 feet, the earth's path would be parabolic, and should this intensity be at all augmented, the orbit would be hyperbolic. There can be but little doubt that an ellipse is the figure of the paths of comets as well as of those of planets; discoveries of recent date confirm the supposition; we know of no heavenly body that moves in a perfect circle, and if the motion were in a parabolic or hyperbolic curve, when once the comet had passed its perihelion, it would continue to recede from the sun, and never return again,—this is evident from the nature of these sections of a cone; but elliptic orbits return into themselves, and the re-appearance of the Encke comet, in the very places predicted, is a proof that this is the curve in which these bodies move. It is usual, however, with astronomers, to calculate the orbit of a comet on the parabolic scheme, which very well represents the motions of a comet, during the time it is visible, though it leaves uncertain the length of the major axis of the ellipse, and, consequently, the period it occupies in revolving round the sun.

The elements of the orbit of a comet are six:

1st. The perihelion distance. 2nd. The situation of the perihelion. 3rd. The place of the nodes. 4th. The inclination of the orbit to the ecliptic. 5th. The time of the perihelion passage. And 6th. The period of the comet's revolution.

Respecting the last particular—the periodic time of a comet—an error, of only a few seconds, will cause a

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difference of many hundred years. Some astronomers, in calculating the orbit of the great comet of 1680, have found the length of its greater axis 426 times the earth's distance from the sun, and, consequently, its period 8792 years; whilst others estimate the greater axis 430 times the earth's distance, which alters the period to 8916 years. The celebrated astronomers, Newton and Halley, judged that this comet completed a revolution in 575 years. A similar disagreement exists respecting the comet of 1811, as determined by different astronomers, its period was, according to Calandrelli, 3056 years; Bessel, 3383 years; Lemaur, 4237 years; Ferrer, 3757 years.

Beneath thine all-directing nod,
Both worlds and worms are equal, God!
Thy hand the *Comet's orbit* drew,
And lighted yonder glow-worm too;
Thou didst the dome of heaven build up,
And spreadst yon cowslip's glittering cup.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

AUGUST.	SUN		Right ascension in time.	Declination North.	Equation of time, add to apparent time.
	rises.	sets.			
	h. m.	h. m.	h. m.	° ′	m. s.
1st Wednesday .	4 18	7 42	8 46	17 58	5 59
7th Tuesday ...	4 28	7 32	9 9	16 22	5 27
13th Monday....	4 38	7 22	9 32	14 37	4 33
19th Sunday	4 49	7 11	9 54	12 43	3 19
25th Saturday...	5 0	7 0	10 16	10 41	1 50

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	4 27	1 37	0 7	17 45	15 7	2 16	12 30
7th.	9 10	1 42	0 14	17 36	14 43	1 55	12 6
13th.	13 51	1 41	0 20	17 27	14 19	1 35	11 42
19th.	18 39	1 33	0 26	17 17	13 54	1 15	11 18
25th.	Noon	1 17	0 32	17 7	13 30	0 56	10 54

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SEPTEMBER.

O azure vaults! O crystal sky!
The world's transparent canopy,
Break your long silence, and let mortals know
With what contempt ye look on things below.

Great eye of all, whose glorious ray
Rules the bright empire of the day,
O praise his name, without whose purer light
Thou hadst been hid in an abyss of night.

Ye moon and planets, who dispense
By God's command your influence,
Resign to him, as your Creator, due
That veneration which men pay to you.

Fairest as well as first of things
From whom all joy, all beauty springs,
O praise th' Almighty ruler of the globe,
Who useth thee for his imperial robe.

Praise Him, ye loud harmonious spheres,
Whose sacred stamp all nature bears,
Who did all forms from the wide chaos draw,
And whose command is th' universal law.

Wentworth Dillon, Earl of Roscommon.

SOLAR PHENOMENA.

The autumnal equinox arrives, and the sun enters Libra at 39 min. after 1 of the morning of the 23rd of this month.

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The earth, in its circle round the sun, attains that point of its course wherein every part of its surface, from pole to pole, receives an equal proportion of the solar influence. After this period, the arctic regions will gradually sink into the darkening gloom of their long and dreary night; and the northern nations of the globe have, in sure succession, the misty morn, the fleeting cloud, the moaning gale, the ice-bound stream, and the snowy mantle of winter. The sun, verging towards the south, will daily contract his course and diminish his meridian height—his rising and setting occasionally diversified with a splendor peculiar to the autumnal season. During the long absence of the sun, the atmosphere, refined by frost, will reveal the beautiful and unimaginable depths of ether, glowing with myriad stars, and those mysterious phenomena which lie far beyond, where the stars of Orion, and their bright companions, send forth their keen scintillations.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter, 2nd day at 30 min. after 1 morning.
Full Moon, 10th 33 5
Last Quarter, 17th .... 45 ..... 1 afternoon.
New Moon, 24th .... 8 ..... 7 morning.

Conjunctions of the Moon with the Planets and Stars.

September 4th, with o in Sagittarius..at 8 evening.
7th, ... Uranus ..... 2 afternoon.
10th, ... Jupiter 5
13th, ... 2 ξ in Cetus .....11 night.
15th, ... Mars 10
18th, ... ν in Gemini ..... 7 morning.
22nd, ... Mercury.....10 night.
23rd, ... Saturn.....11 morning.
25th, ... Venus.....10

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LUNAR OCCULTATIONS

The conjunctions of the moon with o in Sagittarius, 2 ξ in Cetus, and ν in Gemini, will prove occultations—phenomena which are always pleasing, and within the range of a common telescope. The most interesting that were observed in the year 1831, (previously to the month of November,) were the occultations of Jupiter, and his satellites in June, and the stars in the Hyades in October. The following were the observations:—

June 2nd, Thursday morning.—This beautiful phenomenon occurred under as favorable circumstances as could be expected from the low altitude of the moon and planet at the time of occultation; at 1h. 7m. 13s., (clock time,) the rate of motion of Jupiter, as it closely approached the moon's bright limb, appeared to be retarded, and for two or three seconds arrested; its disc then gradually disappeared, preserving a dark fringe or penumbra, which separated the planet from the illuminated edge of the moon, as though the contact was not complete. This appearance continued till nearly the final immersion of the planet at 1h. 8m. 30s. Owing to the vapours of the horizon, the edge of the moon was tremulous, and the disc of Jupiter not well defined: the same cause prevented any observation of the immersions of the satellites. All the emersions were satisfactorily observed. The fourth satellite emerged from behind the moon's dark limb at 2h. 0m. 23s.; the second satellite at 2h. 11m. 49s.; the western limb of Jupiter then reappeared at 2h. 13m. 27s., and the whole disc was uneclipsed at 2h. 15m. 11s.; the first satellite became visible at 2h. 17m. 56s.; and finally, the third at 2h. 23m. 21s.; the belts of Jupiter were visible, and

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no anomalous appearance was observed at the emersions.

The appearance of nature, after the occultations, was singularly tranquil and impressive: the brilliant planet, Jupiter, on the obscure margin of the pale waning moon, the sky entirely free from clouds, and the fixed stars fading away in the morning twilight; the atmosphere was remarkably serene, and, though so very early, the lark was already on the wing, "towards heavens' gates," hailing, with its lively melody, the dawning day. *(See T. T. Ast. Occ. June, 1831, for a diagram of this occultation.)*

Occultations in the Hyades. October 23rd, 1831.—The emersion of γ, in Taurus, was not seen, owing to the lunar disc being obscured by strata of dark clouds.

1 θ immersion..... 9h. 27m. 38s. clock time.

This star appeared to linger at the edge of the disc previous to immersion.

2 θ immersion.....	9h.	38m.	33s.
emersion	10	4	42
1 θ emersion	10	16	29
Aldebaran—immersion..	12	58	12
emersion ..	14	4	8

(See Map of the Hyades, T. T. Asst. Occ., Oct. 1830.)

The singular phenomenon of the projection of Aldebaran, on the lunar disc, was never so distinctly seen as on this occasion. At 58m. 1s. the rate of motion of the star seemed to be slower; at 58m. 4s. it was apparently arrested, and clung to the disc till 58m. 8s.; from this time till its final immersion (58m. 12s.) it appeared completely within the lunar disc, thus:—

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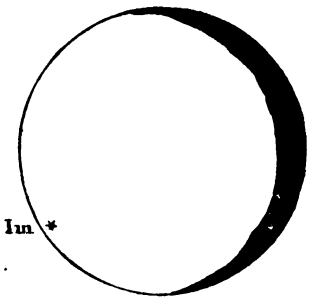

When in this situation it had lost its ruddy color, and appeared perfectly white, or of the color of the moon At its emersion nothing particular was observed; the star shone forth at once with its usual color and brilliancy. The sky was beautifully clear.

PHENOMENA PLANETARUM.

Mercury at his greatest south latitude on the 1st of this month. In conjunction with Venus on the 2nd, and with Saturn on the 5th. Inferior conjunction with the sun at 2 in the morning of the 9th. Stationary near c, in Leo, on the 17th. Ascending node on the 20th. Greatest elongation, (17° 52′,) as a morning star, on the 24th. In perihelion on the 25th. In conjunction with Saturn at 10 in the morning of the 30th, difference in declination 9′.

Venus in conjunction with η, in Virgo, at 11 in the morning of the 12th, difference of latitude 10′.

Phases of Venus.

The proportions of the bright and dark phases of Venus are as follow:—

September 1st.—Illuminated part = 11.8222
Dark part..... = 0.1778

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Mars, on the 30th, approaching ε in Taurus.

The Asteroids.

		Hrs.	Min.		
Vesta,	5th day. Right Ascension	12	8.	N. Declin.	4° 32′
	13th	12	23.	.....	2 55
	21st	12	38.	.....	1 17
	29th	12	53.	S. Declin.	0 20
Juno,	5th	12	18.	N. Declin.	1 38
	13th	12	29.	.....	0 40
	21st	12	40.	S. Declin	0 17
	29th	12	51.	.....	1 13
Pallas,	5th	23	56.	.....	1 29
	13th	23	50.	.....	3 22
	17th	23	47.	.....	4 20
	21st	23	44.	.....	5 18
	29th	23	38.	.....	7 12
Ceres,	5th	3	5.	N. Declin.	6 10
	13th	3	6.	.....	5 59
	21st	3	5.	.....	5 43
	29th	3	2.	.....	5 23

Vesta and *Juno* in conjunction on the 25th, difference of declination about 1¼ degree.

Pallas in opposition on the 17th, north of 27 in Pisces.

Jupiter in opposition to the sun at 2 in the afternoon of the 16th, near 20, in Pisces, and the asteroid Pallas.

Eclipses of the Satellites of Jupiter.

IMMERSIONS.

First satellite,	6th day at 50 min.	19 sec. after	midnight.
	14th 45	.... 13	2 morning.
	15th 13	.... 56	9 night.
Second satellite,	4th 13	.... 42	1 morning.
	11th 49	.... 40	3

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Third satellite, 6th day at 40 min. 38 sec. after 10 night.
14th ..... 42 ..... 24 ..... 2 morning.
Fourth satellite, 16th ..... 41 ..... 0 1

EMERSIONS.

First satellite, 23rd day, at 21 min. 45 sec. after 1 morning.
24th ..... 50 ..... 35 ..... 7 evening.
30th ..... 16 ..... 58 ..... 3 morning.
Second satellite, 21st ..... 25 ..... 42 ..... 10 night.
29th ..... 1 ..... 12 ..... 1 morning.

Saturn in conjunction with the sun at 5 in the morning of the 11th.

FORM OF SATURN'S RING.

The ring of Saturn is scarcely perceptible during the month, as appears from the following proportions of the semi-transverse to the semi-conjugate axis:

September 5th.—Semi-transverse axis —— 36".77
Semi-conjugate axis —— 0 .90
13th.—Semi-transverse axis —— 36 .76
Semi-conjugate axis —— 0 .60
21st.—Semi-transverse axis —— 36 .80
Semi-conjugate axis —— 0.30
30th.—Semi-transverse axis —— 36 .91
Semi-conjugate axis —— 0 .00

DISAPPEARANCE OF THE RING.

The earth will be in the plane of the ring of Saturn at 2 in the morning of the 30th of this month, consequently the ring will be invisible, excepting under peculiar circumstances. In powerful telescopes the edge of the ring has been perceived, appearing as a fine luminous line across the disc of the planet; in the pre-

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sent instance, the position of the planet will be very unfavorable for witnessing this interesting phenomenon, —Saturn being so near the solar rays.

This invisibility occurs when the plane of the ring passes through the sun, or the earth, or between them; in the first case, the sun shines only upon the edge of the ring, which is too thin (less than 1″ in thickness) to reflect sufficient light to render it visible; in the second case, the edge only being opposed to us, it is not visible for the same reason; in the third case, the dark side of the ring is exposed to us, and, therefore, the edge being the only luminous part which is towards the earth, it is invisible on the same account as before.

The ring, however, has been seen, when the earth was on the unenlightened side, which must either have been from the light reflected from the edge, or else the reflection of the light of the globe of Saturn upon the dark side of the ring,—analogous to the secondary light of the moon.

The ring may be visible when the sun is elevated 3′ above its plane, or three days before its plane passes through the sun, and when the earth is elevated 2′ 20″ above the plane, or one day from the earth passing it.

That the ring is exceedingly thin, is evident from the satellites being seen to pass behind and before the ring, in such a manner, that they served as an excellent micrometer to measure its thickness by. The following observations, by Herschel, are very interesting:—

July 18, 1789, at 16h. 41m. 9s. sidereal time, the third satellite seemed to hang upon the following arm, declining a little towards the north, and was seen gradually to advance upon it towards the body of Saturn;

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but the ring was not so thick as the lucid point. July 23rd, at 19h. 41m. 8s. the fourth satellite was a very little preceding the ring, but the ring appeared to be less than half the thickness of the satellite. July 27th, at 20h. 15m. 12s. the fourth satellite was about the middle, upon the following arm of the ring, and towards the south; and the second at the farther end, towards the north; but the arm was thinner than either. August 29th, at 22h. 12m. 25s. the fifth satellite was upon the ring, near the end of the preceding arm, and the thickness of the arm seemed to be about one-third or one-fourth of the diameter of the satellite, which, in the situation it then was, he took to be less than one second in diameter. At the same time, the first appeared at a little distance following the fifth, in the shape of a bead upon a thread, projecting on both sides of the same arm; hence, the arm is thinner than the first, which is considerably smaller than the second, and a little less than the third. October 16, this celebrated astronomer followed the first and second satellites up to the very disc of the planet; and the ring was then so extremely faint, as not to obstruct his seeing them gradually approach the disc. These observations are sufficient to show the extreme thinness of the ring. But Herschel further observes, that there may be a refraction through an atmosphere of the ring, by which the satellites may be lifted up and depressed, so as to become visible on both sides of the ring, even though the ring should be equal in thickness to the smallest satellite, which may amount to a thousand miles.

In October, 1714, when the plane of the ring very nearly passed through the earth, and was approaching

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it, it was observed, that while the arms were decreasing, both in length and breadth, the eastern arm appeared a little larger than the other for three or four nights, and yet it vanished first, for after two nights interruption, by clouds, the western arm alone was seen. In the same year, also, the arms appeared twice as short as usual. In 1774, both the arms appeared completely detached from the planet, and the eastern one larger than the other. From these observations, it is natural to conclude that there are irregularities on the surface of the ring, and that the disappearance of the arms arises from a curvature in its surface.

The disappearances and re-appearances of the ring succeed each other very exactly, and in the same order during each sidereal revolution of Saturn; the following are the epochs in which these phenomena have been observed:—

1715, February 5th.....	Re-appeared.
1730, November 10th.....	Disappeared.
1744, July 23rd	Disappeared.
1760, April 25th	Re-appeared.
1774, January 9th	Re-appeared.
1789, October 1st	Disappeared.
1803, June 18th	Disappeared.
1819, March 1st	Disappeared.

After this month, it will be the northern plane of the ring that is visible; in the year 1838 it will attain its greatest ellipticity, and in the year 1847 again become invisible.

Some philosophers have considered the ring of Saturn as a sort of Aurora Borealis, or shining fluid; others that this luminous zone is the tail of a comet, which the attraction of Saturn has compelled to circulate round

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him: for these, and similar opinions, there is no foundation, as it is probable that the ring is as dense if not more so than the planet; the light of the ring appears sufficiently bright when the disc of Saturn is scarcely perceptible.

Uranus on the 1st, about half a degree north of ι in Capricornus. This planet, when examined under the most favorable circumstances, exhibits a beautiful planetary disc, without the slightest appearance of any ring, either perpendicular or horizontal.

Sphere of the Fixed Stars.

Direction of the zodiac on the 1st day, at 8 in the evening.

Aries and Pisces rising. Aquarius S.E. by E. Capricornus S.S.E. Sagittarius on the meridian. Scorpio S.W. by S. Libra S.W. by W. Virgo setting.

TELESCOPIC OBJECTS.

Sagittarius. This zodiacal constellation is remarkable for its nebulæ, some of which are of a singular description. North of the bow of Sagittarius is a train of faint light with stars. Between the bow of Sagittarius and right foot of Ophiuchus, is a mass of stars of the 8th and 9th magnitudes, surrounded by nebulosity; a similar appearance is also near the star 11. Near 25 is a small nebula. Near the extremity of the bow of Sagittarius, in the Via Lactea, is great nebulosity, containing several stars, the light divided into several parts. The star 9 is encircled with a faint light. Near λ is a round nebula. Below the left arm of Sagittarius are two nebulæ, one of which is like a small

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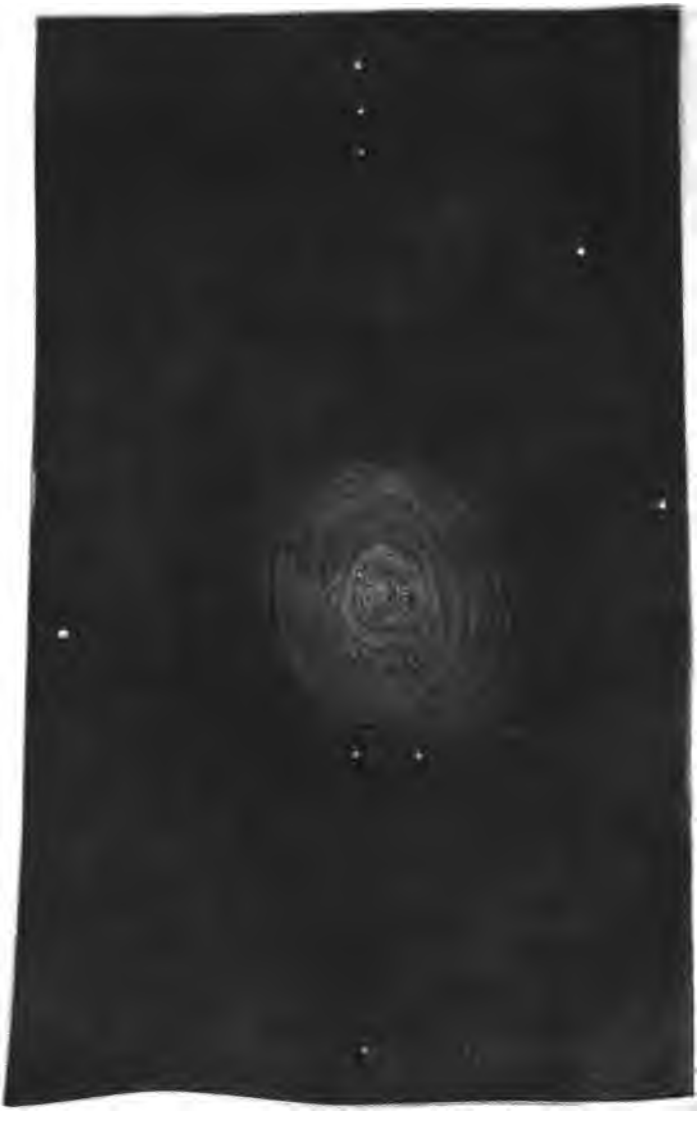

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comet. σ is supposed to be a variable star. ζ is a double star. μ is a triple star.

THE ENCKE COMET.

This comet was first observed in the year 1786 by two French philosophers, Messier and Mechain; it was then traversing the constellation Aquarius. It was again noticed in 1795 by Miss Herschel, its situation was then in Cygnus, destitute of tail or nucleus, having merely a nebulous appearance, not well defined, and about 3′ in diameter; in calculating its elements, at this time, it was found very difficult to make the places by observation correspond with a parabolic orbit, and the results of astronomers differed considerably with each other; this might, in some measure, have been owing to there being no bright stars in that part of the heavens through which the comet was pursuing its course, favorable for a comparison with it, and if the places of the stars that were employed were not correctly determined, that alone would have tended to vitiate the whole calculation.

M. Pons, who has been very successful in tracing this, as well as many other comets, saw it October 20th, 1805; it then appeared as a star of the fourth magnitude, with a nucleus, and a very faint tail two and a half degrees in length; it was, at this time, observed in Ursa Major.

No idea had been entertained that the comet of 1786, 1795, and 1805, was the same body; this was principally to be attributed to the inaccuracy of the observations, and, consequently, the calculations founded on them, which prevented its identity being discovered till

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the year 1819, when it was observed in the constellation Pegasus; it appeared tolerably bright, having no appearance of a tail, its diameter 5′ or 6′, and could be discerned in the evening twilight when only 5° above the horizon. As the parabolic orbit, computed for it by M. Bouvard, did not represent the observations with sufficient accuracy, M. Encke was induced to assume an elliptical one, which satisfied the observed places with the greatest precision; he soon discovered its identity by correcting the former observations, and so accurately calculated its elements, as to merit the honors conferred on him by learned societies; he discovered that the largest axis of its orbit is a little smaller than that of the asteroid Vesta,—that in its aphelion it is midway between the orbits of the small planets and Jupiter, at its aphelion passes within the orbit of Mercury, that its greatest distance is twelve times its least distance, and its period about 1207 days, completing its revolution in rather less time than the asteroids.

From an investigation of the intervals elapsed between the times of this comet being visible, it was soon discovered that there had been three revolutions between 1786 and 1795, and an equal number between 1795 and 1805, and that between 1805 and 1819 there had been four revolutions.

Only one revolution in three is favorable for observing it in the northern hemisphere: when the comet passes its perihelion, between the months of October and February, it is so much to the north of the ecliptic as to render it visible in the northern hemisphere; at opposite seasons of the year it would be unfavorable to us, but favorable for observing it in the southern hemisphere.

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This was the case when it next returned; it was invisible here, but re-discovered at Paramatta, New South Wales, 2nd of June, 1822, by M. Rumker, who observed it in Gemini, when it had passed its perihelion; and the places, as calculated by Professor Encke, agreed so accurately with those observed by M. Rumker, as fully to justify the honour conferred on Encke by assigning his name to the comet.

On its next return, in 1825, it was recognized in both hemispheres,—at the Observatory at Paramatta, and at Marseilles, by M. Pons; its situation in the heavens was near Pollux in Gemini; it had no tail, and was considered equal in brightness to the nebula in the head of Aquarius.

The interest excited at its former returns, since 1819, was considerably increased in the year 1828, when its course in the heavens was peculiarly favorable for observation in the northern hemisphere; most of the observatories in Europe were vigilantly engaged in witnessing its return. It was seen early in October, on the continent, appearing exceedingly dim; about the middle of November it was satisfactorily observed in this country; its course was traced at Deptford, from the 24th of November till the middle of December. Its figure was circular, approaching to an oval; a condensation of the nebulous matter was observed towards the centre, but without any star-like nucleus or tail. Scarcely an evening passed without evidences of its pellucid nature,—very small stars being seen through it.—*(See plate of the Encke comet.)*

The following table exhibits the elliptic elements, answering to five passages of the perihelion, between 1804 and 1830.

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ELEMENTS OF THE ENCKE COMET.

	1805.	1819.	1822.	1825.	1829.
Passage of the Perihelion ..	Nov. 22.006	Jan. 27.752	May, 24.494	Sept. 16.784	Jan. 10.573
Mean diurnal motion	1073".4877	1076".7791	1069".4158	1070".0690	1069".5570
Semi-axis major	2.218912	2.214388	2.224542	2.223636	2.224346
Eccentricity	.8464567	.8484517	.8445479	.8449784	.8446862
Longitude of Perihelion....	156° 43′ 0″	156° 59′ 1″	157° 11′ 29″	157° 14′ 30″	157° 18′ 35″
Longitude of Node	334° 18′ 29″	334° 27′ 36″	334° 19′ 32″	334° 22′ 8″	334° 24′ 15″
Inclination.....	13° 35′ 44″	13° 38′ 33″	13° 22′ 25″	13° 23′ 29″	13° 22′ 34″

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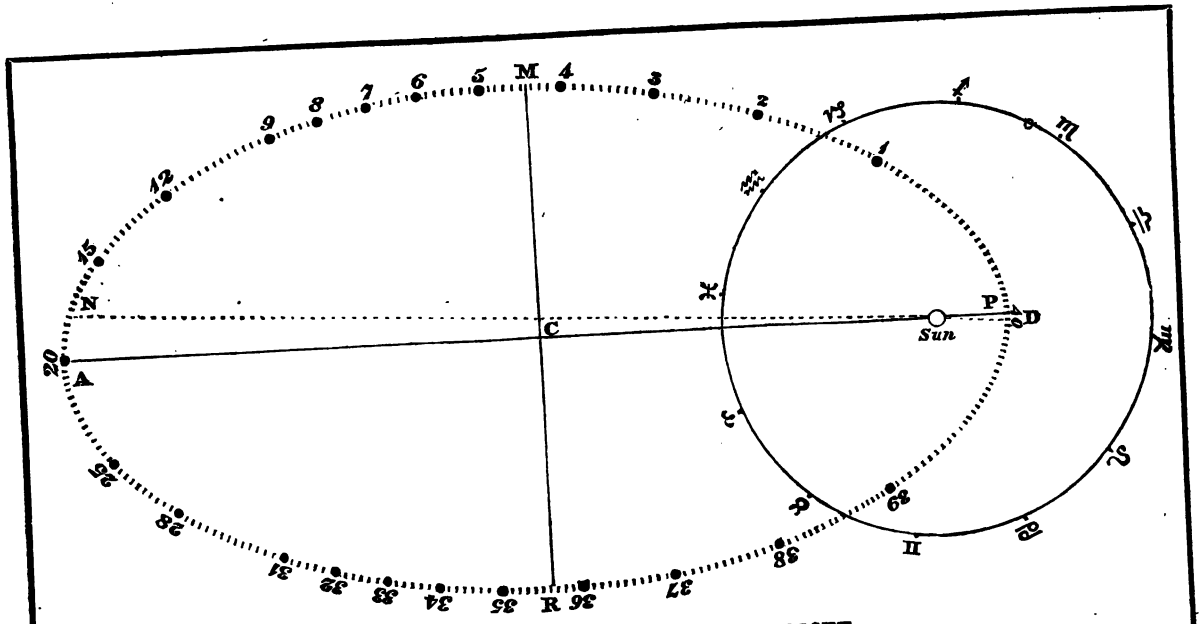

THE ORBIT OF THE ENCKE COMET.

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It is not very probable that it will be satisfactorily visible in this hemisphere, during its return in the present year: it will pass its perihelion the early part of May.

The preceding diagram will afford an idea of the magnitude and figure of the orbit of the Encke comet, compared with that of the earth. The comet moves round the sun in about forty months; the figures round the ellipse indicate the positions of the comet in months, reckoning from the perihelion. A P the major axis. C P the semi-axis major. M R the minor axis. A the aphelion. P the perihelion. The dotted line the line of the nodes. N the ascending node. D the descending node. The order of the figures, point out the nature of the comet's motion, that it is *direct;* or from P to 1, 2, 3, and so on, round the ellipse; were the course from P to 39, 38, 37, &c. the motion would be called retrograde: the comet of Encke is *direct;* the comet of Halley is *retrograde.* This diagram illustrates the slowness of a comet's motion at its aphelion, and its swiftness at its perihelion,—from 39 to P is the curve described in one month; from 12 to A is the curve described in eight months. The circle (having the sun in the centre) represents the orbit of the earth, on which is marked the signs of the ecliptic, by which, and the figures round the orbit of the comet, the relative places of the two bodies may be found at any time from a passage of the perihelion. The ☉, on the orbit of the earth, points out its position at the time that the comet is in perihelion in the present year. The relative positions of the two bodies in the year 1828, at the time when the comet was most distinctly seen, were

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—the earth near ♋, and the comet at the 39th month, from which, it is evident that it was then so far removed from the solar rays, and so near the earth, as to be in its most favorable position for observation.

The return of this comet, in 1828, had been looked for with more than usual interest, on account of a small diminution in its period, observed between each return. This revived the ancient question of a vacuum or plenum, in which the heavenly bodies move, a point that cannot be determined by the planets, their masses being so dense, and an ether so rare, (if it exist,) that immense ages must roll on before its resistance to their motions would affect the period of their revolutions; and not only their density, but also their uniformity of volume, and circular motions, combine to prevent such a resistance being perceptible. With comets the case is widely different, they being bodies exceedingly rare, and, consequently, most likely to be impeded by a medium, such as an ether. In the last return of this comet, some minute variation was noticed between its computed and observed places, but of a nature not sufficient to warrant a confirmation of the existence of this subtle fluid. It has been calculated that the density of the ether, sufficient to produce the acceleration observed in the mean motion of this comet, must be 360.000.000.000 times less than that of atmospheric air.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

SEPTEMBER.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination North.	Equation of time subt. from apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Saturday ...	5 13	6 47	10 42	8 12	0 12
7th Friday	5 24	6 36	11 4	5 59	2 10
13th Thursday ..	5 36	6 24	11 25	3 42	4 14
19th Wednesday.	5 48	6 12	11 47	1 23	6 21
25th Tuesday....	6 0	6 0	12 8	South 0 56	8 25

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	5 34	0 45	0 39	16 55	13 2	0 33	10 29
7th.	10 23	0 6	0 45	16 44	12 37	0 15	10 7
13th.	15 0	23 21	0 50	16 32	12 13	23 53	9 45
19th.	20 36	23 0	0 56	16 18	11 49	23 34	9 23
25th.	1 8	22 57	1 1	16 3	11 24	23 15	9 1

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OCTOBER.

SOLAR PHENOMENA.

To the North Star, looks the Geographer;
To the Meridian Sun, the Astronomer;
The Augur, where Aurora smiles;
The Poet, to the "Happy Isles."

A meridian line, or a line, which, if produced, would pass through both the poles of the earth, and the spot where the observer is placed, is the basis of all astronomical observation, and has, from the very earliest ages of the science, been considered of great importance. The following method of drawing a meridian line, is the simplest that can be adopted.

On a card, or any other convenient superficies, describe two, three, or more concentric circles, and in the common centre, fix perpendicularly a wire, C B, having a well-defined point; this card should be fixed on a perfectly horizontal plane. When the sun shines in the morning, observe where the shadow of the top of the wire, as C D, touches one of the circles; and in the afternoon, mark where the extremity of the shadow C F, just touches the same circle: then through the centre C, draw the line S N. bisecting the arc D F, and S N will be a meridian line, as required. If the same be done

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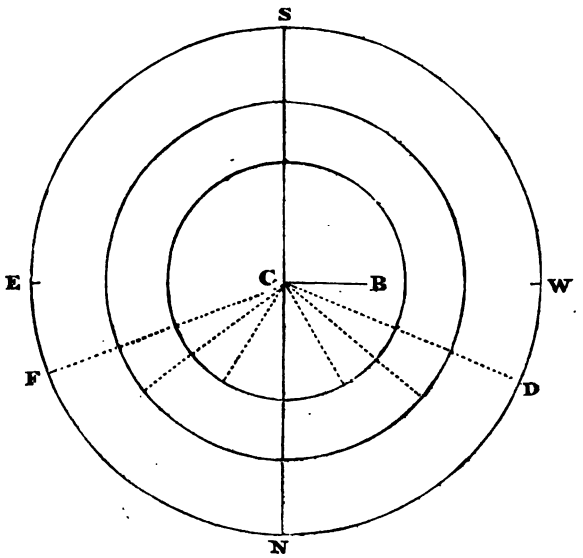

with as many of the circles, as the shining of the sun will admit of, and the mean of all the bisecting lines, be chosen as a meridian, there will be no doubt of its accuracy, particularly if the observations be made about midsummer, which is the best time. In the preceding figure, N S represent the northern and southern points of the horizontal plane; if the line joining N S (the meridian line) be bisected at right angles, E will represent the eastern, and W the western points of the plane.

So important, even in the early ages of astronomy, was the construction of a meridian line, that pillars were erected, on the shadows of which at noon, were marked the varying altitudes of the sun. A pillar of this kind was erected by Eratosthenes at Alexandria. Pliny also

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gives an account of one at Rome. At a more refined period of the science, in 1576, Dante placed in the south wall of the church of St. Petronia, at Bologna, a brass plate, inclined to the wall 45½°, which was the latitude of the place; the height of which, from the ground, was 66 feet. The sun's image was transmitted through a hole in this brass plate, to the marble pavement of the church, on which was traced the meridian line, which extended 169 feet; on this line were marked the equinoxes and solstices.

In 1645, in the same church, the celebrated Cassini, drew another meridian line; he placed his plate of perforated metal, in the roof of the church. In commemoration of this performance, a medal was struck, on one side was the profile of Cassini, on the reverse, the church of St. Petronia, through the roof of which, a ray of light is proceeding from the sun, which, falling on the pavement, determines the time of the sun's passage of the meridian. The accompanying is a copy of this medal.

SOLAR PHENOMENA.

The sun enters Scorpio at 55 min. after 9 of the morning of the 23d of this month.

LUNAR PHENOMENA.

Phases of the Moon.

First Quarter,	1st day at	37 min. after	7 evening.
Full Moon,	9th	36	7
Last Quarter,	16th	33	8
New Moon,	23rd	48	6
First Quarter,	31st	6	4 afternoon.

Conjunctions of the Moon with the Planets and Stars.

October 4th, with Uranus ..... at 9 evening.
7th, ... Jupiter 6

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October 13th, with Mars ..... at noon.
16th, ... ζ in Gemini ..... 2 morning.
20th, ... Saturn ..... midnight.
23rd, ... Mercury ..... 4 afternoon.
25th, ... Venus 3

PHENOMENA PLANETARUM.

Mercury at his greatest north latitude on the 5th of this month. In conjunction with ♍ in Virgo, on the 15th, difference of latitude 16′. In superior conjunction with the sun, at 2 in the afternoon of the 23rd. In conjunction with λ in Virgo, on the 26th, difference of latitude 14′. Descending node on the 28th.

Venus in conjunction with λ in Virgo, on the 8th, difference of latitude 10′. Descending node on the 16th.

Phases of Venus.

The following are the proportions of the bright and dark phases of this planet:—

October 1st.—Illuminated disc = 11.4378
Dark part .... = 1.5622

Mars will be stationary on the 14th. In conjunction with 2 κ in Taurus, at 11 in the morning of the 28th.

The Asteroids.

			Hrs.	Min.			
Vesta,	3rd day.	Right Ascension,	13	0	S. Declin.	1°	9′
	11th		13	16	.....	2	45
	19th		13	31	....	4	19
	27th		13	47	..... .	5	51
Juno,	3rd		12	56	.....	1	41
	11th		13	7	.....	2	36
	19th		13	18	.....	3	29
	27th		13	29	.....	4	20
Pallas,	3rd		23	35	.....	8	6
	11th		23	30	.....	9	48

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		Hrs.	Min.			
Pallas, 19th day.	Right Ascension.	23	25	S. Declin.	11°	17′
27th	.....	23	23	.....	12	31
Ceres, 3rd	.....	3	1	N. Declin.	5	13
11th	.....	2	56	.....	4	50
19th	....	2	50	.....	4	28
27th	.....	2	43	.....	4	9
31st	....	2	39	.....	4	1

Ceres in opposition on the 31st, in a line with, and equally distant from ν and Menkar, in Cetus; a line drawn from λ and γ in the same constellation, will pass through the asteroid. Ceres is of a ruddy colour, surrounded with nebulosity, which gives it the appearance of a comet; it shines as a star of the eighth magnitude.

Eclipses of the Satellites of Jupiter.

EMERSIONS.

First Satellite,	1st day at	45 min.	48 sec.	after	9 night.
	8th	41	10		11
	10th	10	0		6
	16th	36	40		1 morning.
	17th	5	32		8 night.
	24th	1	10		10
	31st	56	55		11
Second Satellite,	16th	29	57		7
	23rd	5	29		10
	30th	41	4		midnight.
Third Satellite,	12th	54	34		9 night.
	20th	55	53		1 morning.
Fourth Satellite,	2nd	57	45		10 night.

IMMERSIONS.

Third Satellite,	19th day at	54 min.	2 sec.	after	10 night.
Fourth Satellite,	2nd	1	25		8

Saturn in conjunction with β in Virgo, at 3 in the morning of the 30th.

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SATURN'S RING.

Saturn's Ring is only visible under the circumstances referred to in the last month.

Uranus stationary on the 25th, near ι in Capricornus.

Sphere of the Fixed Stars.

Capricornus west, and Aquarius east, of the meridian, on the 1st day, at 8 in the evening.

Capricornus is bounded on the north and east by Antinöus and Aquarius; south by Pisces Australis, and west by Sagittarius.

Aquarius, is bounded on the north by Equuleus and Pegasus; east by Pisces and Cetus; south by Pisces Australis, and Apparatus Sculptoris, and west by Capricornus and Antinöus.

Telescopic Objects.

Capricornus. α in this constellation, to the unassisted sight, is a double star, each of which is a double star; 1 α presents one of the most beautiful and delicate objects in the heavens; it is a difficult telescopic object. β, ϵ, ξ, o, are double stars. σ is double, the large star, red, the small, dusky blue. 11 is also double, both stars of a reddish white colour. ρ is a triple star. Above the shoulders of Capricornus are nebulæ, one of which is planetary.

Aquarius. β is a small star, the large star white, the small dusky. ζ is double, both stars white. τ, ψ, χ, and 24, are double stars. A variable star, near ω in the River of Aquarius. ν is a triple star. In the head of Aquarius, is a nebulous star; it has the appearance of a comet surrounded with nebulosity.

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COMETARY ASTRONOMY.

Remarkable Comets.

***The Comet of Biela, or Comet of* 1832.** This comet was discovered on the 27th February 1826, by M. Biela, at Josephstadt in Bohemia, appearing as a small round nebulosity; it was seen by M. Gambart, at Marseilles, 9th March following, and afterwards observed at most of the European Observatories. It continued visible till the beginning of May.

On determining the elements of this comet, it was soon found, that these had a great resemblance to comets which had appeared in the years 1772, and 1806; a closer investigation proved the identity of the three. An anomaly, however, appeared in the period of revolution, which in one of its returns was completed in 2460 days, and in the other, 2469 days; this inequality was found to be owing to the action of the planet Jupiter, near which the comet had passed in the years 1782, 1794, and 1807; allowing for these perturbations, and a similar influence in May 1831, the following are the elements, as calculated by M. Damoiseau :—

Passage of the perihelion 1832, November, 27.4808. Paris. Meantime, reckoning from midnight.—

Longitude of the Perihelion....	109° 56′ 45″
Longitude of the ascending node,	248 12 24
Inclination.....	13 13 13
Eccentricity	0.7517481
Semi-axis major	3.53683

The following computed places, will facilitate the discovery of the comet on its return :—

August 4th. The comet, near 12—a double star in

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Triangulum Minor. Rises about 8 in the evening, N. E. by N. ½ E. Right ascension, 35° 46′. North declination, 28° 44′.

21st day. Rises at ¾ after 7, N. E. by N. Passes the meridian shortly after Algol, the bright star in Medusa's head, from which it will be distant 8° south. Right ascension, 46° 50′ North declination, 32° 28′.

September 5th. Rises N.N.E. about 7 in the evening, and passes the meridian a short time before the Hyades, distant from them 17° north. Right ascension, 60°. North declination, 35° 25′.

18th day. Rises N. by E. ¼ E. at 7 in the evening, and passes the meridian soon after Capella, and a short time before Orion; a line drawn from Capella to β, the star in the northern horn of Taurus, will pass nearly through the comet,—the latter nearly midway between these stars. Right ascension, 76° 2′. North declination, 36° 49′.

October 1st. Rises N.N.E. about 8 in the evening, and passes the meridian with γ in Gemini. Right ascension, 95° 0′. North declination, 35° 26′.

12th day. Rises N. E. by N. at 9 in the evening, two degrees south-west of the double star Castor, in Gemini. Right ascension, 109° 12′. North declination, 30° 54′.

22d day. Rises N.E. at 9 in the evening; after passing near 64 and 65 in Gemini, it will, on this day, be nearly in a line with ι and κ in the same constellation, and 3¾ south of Pollux. Right ascension, 110° 50′. North declination, 25° 51′.

November 1st. Rises N.E. by E. at ¼ after 9 in the evening, and passes the meridian with Procyon and

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Pollux, distant from the latter 8½° south. Right ascension, 112° 1′. North declination, 20° 37′.

10th day. Rises E.N.E. at ¼ after 9 in the evening, near 12, the most northern star in Canis Minor. Right ascension, 114° 26′. North declination, 15° 58′.

19th day. Rises E.N.E. about 9 in the evening, midway between, and in a line with 12, in Canis Minor, and β in Cancer. Right ascension, 118° 29′. North declination, 15° 28′.

27th day. Rises E.N.E. ¾ E. about 9 in the evening; midway between β in Cancer, and δ in Hydra. In perihelion on this day. Right ascension, 124° 2′. North declination, 8° 44′.

The comet will be nearest to the earth on the 22d of October, when its distance will be about fifty millions of miles.

This is the comet concerning which such dire forebodings were entertained on the Continent; many individuals firmly believing, that in the year 1832, it would come in contact with the earth, and prove its destruction. The alarm appears to have originated in the French Capital, which seems especially accessible to these terrific apprehensions. In the year 1773, the celebrated La Lande wrote a Memoir on cometary influence, which was intended to be read by him at a meeting of the Academy of Sciences. This memoir, however, was not read, but its subject was whispered abroad, until at length, it was asserted,—that a comet had been announced,—"que dans un an, dans un mois———dans huit jours,"—would occasion the destruction of the world. The popular tumult at length increased to such a degree, that the Lieutenant of Police, requested of

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La Lande, to re-establish the public tranquillity, by explaining the nature of the memoir; the terrors of the Parisians were not, however, allayed till the Memoir itself was published.

COMET OF HALLEY.

This "great and fearful star," as it was termed in the old chronicles, was first observed in the year 1305, about the season of Easter. It returned again in the year 1456, and was beheld by all Europe, with fear and amazement. The Turks were then engaged in a successful war, in which they destroyed the Greek Empire; they, therefore, might have regarded the comet as an auspicious omen, though the Infidels themselves, had been alarmed only two years before by a comet, which they had considered as prognosticating the overthrow of the Crescent. The Christians thought, that their destruction was portended by its appearance, especially as the tail was turned towards the east. Pope Calixtus believed it to be at once the sign and instrument of divine wrath; he ordered public prayers to be offered up, and decreed, that in every town, the bells should be tolled at mid-day, to warn the people to supplicate the mercy and forgiveness of heaven. In this very circumstance, originates the custom still prevalent in Catholic countries, of ringing the Cathedral bells at noon.

Its next visits were in the years 1531 (when it appeared of a bright gold colour), and 1607; in the latter year it passed through Ursa Major, Boötes, Serpentis, and Ophiuchus, continuing visible about five weeks. The diameter of its head was 2′; its nucleus, 10″ or 12″ of an unequal roundness, exhibiting phases like the moon,

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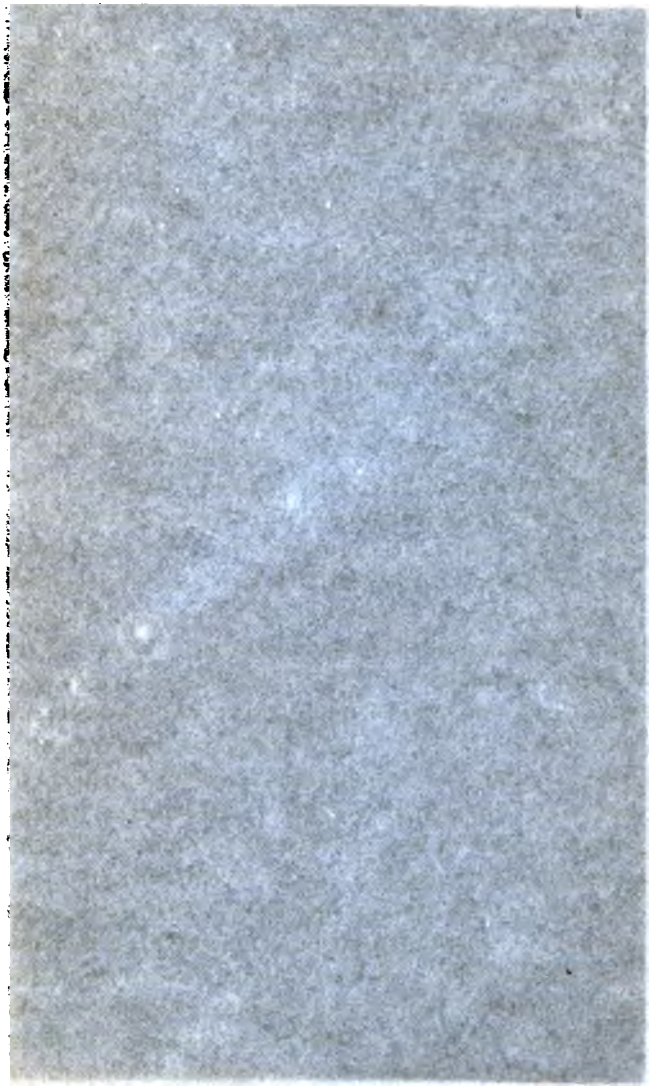

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The Comet of Pidding. in 1807.

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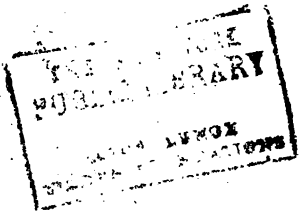

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or inferior planets; its light, pale, and watery, and tail, like a flaming lance or sword seven degrees in length, and of considerable breadth. The annexed is a drawing of its appearance at this period, according to the Celestial Atlas before referred to.

This Atlas has the following observations on the appearance of this "splendid enigma:" "The Duke of Lorrain died. A great war between the Swedes and Danes. These are the effects that followed this comet."

In the year 1682, the wanderer again visited this hemisphere, appearing with considerable brightness, not dark and livid as at its former return. It was on this occasion observed by Dr. Halley, who pointed out its identity with the comets of 1305, 1456, 1531, and 1607; he also predicted its return in 1758, or the commencement of 1759. Previous to this return, a French astronomer, Clairault, investigated the attractive influence of the planets Jupiter and Saturn, on the comet, and announced, that it would pass its perihelion on the 13th April 1759. The comet did actually appear as predicted by Halley, (whose honoured remains were then reposing in the village churchyard of Lee, near Blackheath), and reached its perihelion a month earlier than Clairault had foretold; on revising his calculations, he lessened the error to 19 days, and the slight discrepancy that remained, may fairly be attributable to the uncertainty of the mass of Saturn being accurately determined, and the existence of the planet Uranus, not then being known.

There is an interesting circumstance attending its rediscovery in this last return,—it was first perceived by an individual in a humble rank of life. On the 25th of December, 1758, the Halley Comet was detected with

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only the naked eye at Prohlis, near Dresden, by a Saxon peasant of the name of Palitzch, at a time when all the great astronomers of Europe were seeking for it in vain with their telescopes. Nor did Palitzch owe his discovery merely to his superior powers of vision,—this Saxon peasant was really an astronomer, and for him was reserved the honour of being the first of all the astronomers of Europe, in the discovery of the return of this anxiously expected comet. Palitzch, who was born in 1723, continued to cultivate astronomy as well as his garden, for many years after this event, and died in his native village in the year 1788.

The next individual, who saw the comet at this return, was Messier, a French astronomer; he discovered it on January 21st, 1759, and observed it till February 14th; again, from March 31st, until April 16th; and also from May 1st, until June 3d: but although Pingré, La Lande, Lemonnier, La Caille, and all the astronomers of Paris, were anxiously looking for it, as likely to afford to the Newtonian theory of gravitation a more beautiful confirmation, than any it had hitherto received, Delisle did not permit Messier to give notice of its appearance, until the 1st of April, when he could no longer retain the secret. It was afterwards observed throughout May, by all the other astronomers.

As the time of the next return of this comet is rapidly approaching, so is the interest connected with it, increasing. The French Institute has twice or thrice proposed a prize, for the best theory of its perturbations. Astronomers, in this country, and on the Continent, have re-investigated its elements; among the latter, are M. M. Damoiseau, Burckart, and Pontecoulant, (to the

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latter of whom the prize has been awarded), who have introduced into their computations a very refined and beautiful analysis of the perturbations arising from the action of the earth, and the three larger planets. The following may, therefore, now be assigned as the elements of the comet of 1835:—

Passage of the perihelion	4.32, Nov. 1835.
Semi-axis major	17.98525
Perihelion distance	.588017
Ratio of eccentricity to semi-axis major	0.9673055
Place of perihelion on the orbit	304° 27′ 24″
Longitude of the ascending node	55 9 7
Inclination	17 41 5
Motion	Retrograde.

According to Mr. Lubbock, member of the Royal Astronomical Society of London, this comet will pass its perihelion in 1835, October 31st, 4 hrs. 17 min. mean time from midnight at Paris.

Mr. Lubbock states, that this comet is one of those which approach near to the orbit of the earth. When in one of its nodes, it may be at a distance from the earth, equal to a twentieth of the distance of the sun; but its mass is so small, that were it to come very much nearer, it would afford no just cause of alarm."

COMET OF 1770.

The effect of planetary perturbation on the comet of Halley was trifling, when compared with that which was detected in the comet of 1770, generally known by the denomination of the "lost comet," for, according to some astronomers, it is actually annihilated, or carried off from the system; its matter dissipated, atoms scattered, and in the form of aeroliths or meteors, hurled to

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the planets, when arriving within the sphere of their attractions!

Respecting this remarkable body which appeared in the year 1770, there can be no doubt, but that the calculations of its orbit were correct for the time that it was observed, and that the semi-axis major of its path was 3.14359, and periodic time 5 years, 210 days; according to this computation it ought to have returned in the year 1776, which it probably did, and passed its perihelion in the month of March of that year, though invisible to the earth from being the whole time lost in the solar rays. In anticipating a subsequent return in 1779, astronomers were disappointed,—it was not visible in that year, nor has it been seen since.

The solution of this mysterious disappearance is connected with one of the most striking facts in astronomical science. Previous to the year 1770, the comet moved in an orbit which, when nearest to the sun, was as remote as the path of Jupiter, and which it traversed in 50 years; in 1767 it passed near this planet, and as the comet and Jupiter were both moving the same way and in nearly the same plane, they continued in proximity for several months; this entirely altered the form of the orbit, and caused the comet to wheel its path towards the orbit of the earth, which it crossed, so close to our planet, that had it have been equal in magnitude and density to our earth it would have shortened our year 2 hrs. 40 min. It continued visible from June to October, was extremely brilliant, and its magnitude was estimated to be thirteen times greater than the moon: its period was now changed from 50 years, to 5 years, 210 days.

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In approaching the sun in 1779, it again encountered the attraction of Jupiter, and continued within the influence of that planet from June to October before they finally separated; this again so altered the elements of its orbit, that now it does not approach nearer to the sun than the asteroid Ceres, or extend its course beyond the orbit of Uranus, completing its revolution in 20 years. It is, therefore, erroneous to say, that this comet is "lost,"—it is in existence, and in each instance of its wanderings faithfully obeyed the laws of gravitation, which in 1770 introduced a bright and beautiful body to the notice of the human race, and again in 1779 withdrew it into distant regions, where it will always remain unseen by us, unless new perturbations direct its course towards the terrestrial orbit.

This is a brief sketch of the history of one of the most remarkable bodies in the system, and is recorded in the annals of human knowledge as one of the noblest efforts which astronomy has achieved in unravelling the mysteries of nature.

COMET OF 1680.

According to Whiston, the comet of 1680 was a principal agent in producing the beautiful order now established on our planet. In his fanciful Theory of the Earth, he considered this world to be originally composed of heterogeneous materials, having its centre occupied with a solid hot nucleus, of about 8000 miles in diameter: this chaotic globe had no rotation about an axis, but simply a revolution round the sun. After a lapse of some thousand years, there came careering from the realms of night, the comet now known by the name of

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the comet of 1680; while our earth, in a chaotic state, was pursuing its dreary course, this comet struck it obliquely, so as to cause it to spin on its soft axle, which by producing the kindly interchange of day and night, rendered it the fit abode of life and organization. In this state, the world continued for many centuries, when this comet again visited it, not to strike, but merely to enfold it within the embraces of its huge tail, and thus occasioned the deluge. This philosopher again recognizes this comet, as the one that appeared 44 years before the Christian era, then called the Julium Sidus, again in the years 532, 1106, and 1680; Sir Isaac Newton, who witnessed it, at its last return, had no doubt, that the last four observations, were of one and the same body, and that its period was 575 years. Whiston essayed to penetrate the veil of futurity, to the period, when this comet, (an appointed executioner) being heated to an excessive degree, by its near approach to the sun, would, on its return, envelope the world in flames, and scatter the ashes of its dissolved elements through the regions of heaven.

The comet of 1680, on November, 11th day, 1 hr. 6 min. P. M. was not above a semi-diameter of the sun, to the northwards of the orbit of the earth: the earth was, however, in a distant part of its course, and unaffected by the terrific visitant. This comet will probably return in the year 2255.

THE COMET OF 1811.

This comet, (to which such frequent reference has been made in this volume,) was considered the baleful star of Napoleon, and the precursor of the conflagration

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of Moscow. The agriculturist and the grazier, scowled at the same bright stranger, for parching their lands and drowning their flocks. Heedless of the fears or fancies of man, the comet held on its sublime course, though in France it had the credit of improving the vintage,—the produce of that year being called the "comet wine," —one class alone deriving a cheering influence from its presence—the rosy bachannal, who hailed the splendid visitant, for sending wines, brilliant as its nucleus, and sparkling as its tail. It is calculated that this comet will return in the year 6048.

THE COMET OF 1831.

The comet that appeared in January of 1831, was supposed to be that of 1770, for which, however, there was not the least foundation,—not even in period; on the supposition, that its orbit remained unaltered, and that it had duly returned every 5 years, 210 days, but invisible from defectiveness of light, it would not have completed its eleventh revolution till early in the year 1832. The comet of 1831 was seen by Mr. Herapath, on the 7th of January, at 6 in the morning. The tail was then perpendicular to the horizon, inclining towards the south, and of a white colour, apparently between 1° and 2° long. The head was of the same colour as the tail, but far more splendid; it appeared to equal in light, stars of the second magnitude, while it exceeded them in size.

January, 7 days, 6 hrs. 30 min. A.M. Right ascension, 17 hrs. 36 min. 44 sec. South declination, 12° 33′. An observation by Sir James South, about 48 hours afterwards gives,—right ascension, 17 hrs. 27 min.

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57 sec. South declination, 12° 1′ 12″. A succession of unfavourable weather, for several days after these observations, prevented the comet from being seen; the following were the observations at Deptford:—

January, 26 days, 4 hrs. 15 min. to 6 hrs. 15 min. (Wednesday morning). The comet was a little west of a line connecting δ, ε, and ζ in Ophiucus, and nearly equally distant from δ and ζ. It had a pale nebulous appearance, was of an irregular circular form; no star-like nucleus, though a tendency to condensation was perceptible towards its centre. On the disappearance of the moon, and before the morning twilight interrupted the observations, an extremely diluted tail was suspected, extending in a westerly direction.

28th day, 6 hrs. morning. Notwithstanding the full moon, the comet was distinctly seen with the telescope; its central light was more sharp and twinkling than on the 26th. It formed the summit of an isosceles triangle, with δ and ε in Ophiuchus,—the comet west of the stars.

The mind contemplates with astonishment the very lengthened periods assigned to some of these erratic bodies; the imagination travels back to those epochs, when they were seen by our ancestors with superstitious awe, or devout religious feeling. This idea enters especially into our views as inhabitants of this rolling world, so frequently the witnesses of the visits of these mysterious pilgrims of space, whose periods may be said on a large scale to measure the cares, joys, and destinies of the human family. The comet of Halley;—this may, it is probable, be seen in the year 1835, by the Octogenarian, who witnessed it in the year 1759 with childish

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curiosity and terror. What a contrast is at once presented to the mind, the beauty and simplicity of infancy, and the querulousness and decrepitude of age. A flourishing, populous, extensive empire witnesses one of these splendid bodies shaking its tresses as it passes onwards to the realms of space; it completes its revolution of centuries, it returns,—the empire has decayed, the name scarcely remembered, it exists only on the page of history. A comet proceeds on its awful course of thousands of years, and glancing by a bright and beautiful world, visits realms beyond the reach of thought; it wheels its car homewards, and misses this bright and beautiful world from the system, or meets only with its chaotic and scattered fragments!

Though vast to the finite mind—these numbers, periods, and distances,—what are they, but a drop in the ocean of infinity!—a point in the abyss of eternal duration! On the vast scale of eternity and the broad region of interminable extent, what are thousands of years, and millions of wandering bodies—but the duration of the splendour of a dew-drop before it is exhaled! There is *time* for all these movements in the countless ages of eternity, and there is *space* for all these revolutions in the ample dominions of the universe of GOD.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

OCTOBER.	SUN'S rising.	SUN'S setting.	Right ascension in time.	Declination South.	Equation of time subt. from apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Monday....	6 11	5 49	12 30	3 17	10 23
7th Sunday	6 23	5 37	12 52	5 36	12 11
13th Saturday ...	6 35	5 25	13 14	7 52	13 44
19th Friday	6 46	5 14	13 36	10 5	14 59
25th Thursday ..	6 58	5 2	13 59	12 12	15 49

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	6 2	23 8	1 7	15 46	11 0	22 56	8 38
7th.	10 44	23 23	1 14	15 27	10 35	22 37	8 16
13th.	15 42	23 39	1 20	15 6	10 11	22 18	7 54
19th.	21 24	23 53	1 27	14 42	9 47	21 58	7 32
25th.	1 31	0 5	1 34	14 16	9 22	21 37	7 10

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NOVEMBER.

SOLAR PHENOMENA.

The sun enters Sagittarius at 24 min. after 6 of the morning of the 22nd of this month.

LUNAR PHENOMENA.

Phases of the Moon.

Full Moon,	8th day, at	30 min. after	8 morning.
Last Quarter,	15th	51	3
New Moon,	22nd	17	9
First Quarter,	30th	58	Noon.

Conjunctions of the Moon with the Planets and Stars.

November	1st, with	Uranus.....	at 4 morning.
	1st, ...	δ in Capricornus ...	7 night.
	3rd, ...	Jupiter.....	11
	7th, ...	μ in Cetus	10
	9th, ...	Mars.....	11 morning.
	12th, ...	ζ in Gemini.....	8
	13th, ...	δ in Cancer	Midnight.
	17th, ...	Saturn	11 morning.
	23rd, ...	Mercury	7 evening.
	25th, ...	Venus	2 morning.
	28th, ...	Uranus.....	1 afternoon.

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PHENOMENA PLANETARUM.

Mercury in aphelion on the 8th of this month. Greatest south latitude on the 28th.

Venus in conjunction with 39 in Ophiuchus on the 12th, difference of latitude 2′. In aphelion on the 19th.

Phases of Venus.

The following are the proportions of the bright and dark phases of this planet:

November 1st.—Illuminated disc = 10.8663
Dark part..... = 1.1337

Mars in his ascending node at 3 in the morning of the 2nd. In conjunction with 1 A, in Taurus, at 3 in the afternoon of the 13th. The conjunction of Mars with this star, 17th March, 1831, if not an occultation, was a very close appulse. *(See T. T., March, 1831.)* The planet was traced to within a minute distance of the star, and at 15 min. after 11, at night, the star disappeared, and continued invisible for about three minutes: the proximity of Mars, to the vapours of the horizon, rendered the edge of the disc rather confused, notwithstanding which, the impression is that the star was occulted.

Mars in opposition to the sun at 30 min. after 3 of the afternoon of the 20th. The planet will be beautifully situated south of the Pleiades.

The Asteroids.

			Hrs.	Min.			
Vesta,	4th day.	Right Ascension,	14	3.	S. Declin.	7°	21′
	12th		14	19.	.....	8	46
	20th	....	14	35.	.....	10	8
	28th	....	14	51.	.....	11	25

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			Hrs.	Min.			
Juno,	4th day.	Right Ascension,	13	40.	S. Declin.	5°	8′
	12th	.....	13	51.	.....	5	53
	20th	.....	14	1.	.....	6	35
	28th	.....	14	11.	.....	7	13
Pallas,	4th	.....	23	21.	.....	13	30
	12th	.....	23	21.	.....	14	14
	20th	.....	23	22.	.....	14	44
	28th	.....	23	25.	.....	15	1
Ceres,	4th	.....	2	36.	N. Declin.	3	54
	12th	.....	2	28.	.....	3	47
	20th	.....	2	22.	.....	3	47
	28th	.....	2	16.	.....	3	56

Jupiter stationary on the 13th.

Eclipses of the Satellites of Jupiter.

EMERSIONS.

First satellite,	2nd day, at	25 min.	54 sec.	after	6 evening.
	9th	21	46		8
	16th	17	41		10 night.
	25th	42	37		6 evening.
Second satellite,	17th	10	9		7
	24th	45	50		9
Third satellite.	17th	3	36		6
	24th	5	42		10

IMMERSION.

Third satellite, 24th day, at 8 min. 27 sec. after 7 evening.

SATURN'S RING.

The ring of Saturn is still invisible, excepting under the circumstances specified in the *Ast. Occ. for September.*

Uranus in quadrature at 45 min. after 1 of the morning of the 7th.

Sphere of the Fixed Stars.

Pisces. This zodiacal constellation is bounded on

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the north by Andromeda; east by Aries and Triangulum; south by Cetus; and west by Aquarius and Pegasus.

TELESCOPIC OBJECTS

The brightest star in Pisces is α of the third magnitude, it is a double star, both of which it is composed are white. ζ is a very beautiful double star. 35 and 38 are double stars of a pale red colour. ι, κ, ψ, 35, 51, 76, 77, and 100, are double stars. A faint nebula near η. The star numbered 108 is missing.

COMETARY ASTRONOMY.

ON THE PROBABILITY OF A CONCUSSION OF A COMET WITH THE EARTH.

It has been stated that the comet of 1770 passed through the system of the planet Jupiter, without in the slightest degree affecting the motions of either the primary or his satellites; also, that it passed sufficiently near our planet to have shortened the length of the year had its mass been equal to that of the earth. No effect whatever was produced, from whence it may be concluded, that the neighbourhood of a comet is not of sufficient importance to excite any alarming apprehensions for the safety of the habitation of man.

Most of the calculations that have been made respecting the effect of the proximity of a comet to our earth have proceeded on erroneous principles,—over-rating the quantity of matter in comets, and losing sight of their great velocity when in this part of the system. For a comet to produce any direful effect, it ought to contain not merely a considerable quantity of matter, but also

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ought to be vertical and stationary to the earth's surface for several hours; instead of which, we have sufficient reason to believe that though vast in volume, comets contain but little matter in proportion, consequently, their attractive energy would be inconsiderable; also their velocity would, in a very short period, carry them beyond the limit of exerting any influence on the waters of the globe. Of course, this general statement would be modified by the rate and direction of a comet's motion, and also the earth's rotation.

It may, then, be asserted with safety that the close appulse of a comet would not be attended with any fatal results; and that this security principally consists in its great velocity, which would so swiftly remove it to a distance. But, the very circumstance which, in the case of *proximity*, would be the security of our globe, (its velocity,) would, in the event of a *contact*, be attended with the direst effects. It is true that the probability of a contact is less, in an almost infinite degree, than the proximity of a comet, which, notwithstanding, is an event which every astronomer is fully aware, is within the verge of possibility.

The effects of a contact would be greatly modified by circumstances. Should the comet strike the earth obliquely, it would glance off, and the consequences would be partial. If the point of collision were on a continent of the globe, mountains would be hurled from their bases, and new ones would elevate their ridges towards the clouds. Were the place of meeting on either of the great oceans, some regions would be deserted, and others would be inundated by the waters of the sea. These dreadful consequences would be increased, in an inde-

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finite proportion, if the point of contact were in the direction of the earth's centre; the meeting would be terrific; the earth's period of revolution would, in all probability, be altered, either by carrying it nearer to or farther from the sun; a different inclination of the axis might be given, and there would be a consequent change of seasons; the diurnal motion might be either accelerated or retarded, by which the length of the day would be affected; the vast continents of the globe would be again covered with the ocean, which, deserting its bed, would rush towards the new equator!

Infinitely more tremendous would be the catastrophe if the earth were struck by a *retrograde comet* in the direction of the terrestrial centre, the comet making up, by its velocity, the deficiency of mass: in this case the centrifugal force of both bodies might be annihilated,—the centripetal principle alone obeyed, and both comet and earth rush to the sun!

It must, however, be stated, that the probability of such an event is all but infinitely removed: the most likely of any that is known, to effect such a consummation, is the comet of Encke, which it has been calculated would come in collision with our earth after a lapse of 219 millions of years! This calculation proceeds on the soundest principles of reasoning, and proves not so much the safety of our globe from cometary destruction, (for some comet, hitherto unseen by mortal eyes, may *now* be winging its flight directly towards our globe,) as the astonishing powers of the mind of man, which can thus essay to penetrate the veil of futurity, and read the destiny of a world.

But destruction to this terrestrial orb and its teeming

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inhabitants, may be more speedily brought about than by a concussion with these celestial agents. A single principle of motion annihilated, evaporation suspended, or a component part of the atmosphere abstracted, and "final ruin would drive her ploughshare o'er creation;" universal conflagration would instantly ensue from the separation of the oxygen from the nitrogen of the atmosphere,—the former exerting its native energies without control wherever it extends,—solid rocks, ponderous marble, metals, and even water itself, would burst into an intensity of flame, and change the aspect of all sublunary things.

But all these vast bodies of the universe are, doubtless, kept in their prescribed limits as with so many "reins and bridles," and when this earth has completed its destined circles, and fulfilled the purposes for which it was called out of nothing, it will need but the command of the glorious Creator who at first spoke this beautiful frame into being, bliss, and light, to return it to its primeval gloom, or bid it shine forth with new resplendent beauty and lustre.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

NOVEMBER.	SUN		Right ascension in time.	Declination South.	Equation of time, subt. from apparent time.
	rises.	sets.			
	h. m.	h. m.	h. m.	° ′	m. s.
1st Thursday ...	7 11	4 49	14 26	14 32	16 15
7th Wednesday.	7 21	4 39	14 50	16 22	16 8
13th Tuesday	7 31	4 29	15 14	18 3	15 30
19th Monday....	7 41	4 19	15 39	19 33	14 21
25th Sunday.....	7 49	4 11	16 4	20 49	12 42

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	7 11	0 21	1 43	13 42	8 54	21 13	6 41
7th.	11 48	0 35	1 51	13 10	8 29	20 51	6 18
13th.	17 32	0 48	1 58	12 37	8 5	20 29	5 55
19th.	22 34	1 2	2 6	12 3	7 40	20 6	5 32
25th.	2 37	1 15	2 13	11 28	7 16	19 42	5 9

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DECEMBER.

SOLAR PHENOMENA.

The orb of day, to glad the plains below,
O'er-tops the hills where gloomy clouds prevail,
Rolls the blue vapour from the mountain's brow,
Inhales the mist, and gilds the sloping vale;
But though the sun the clouded prospect cheers,
It smiles through ether still, but smiles, alas! in tears.

The sun enters Capricornus at 56 min. after 6 of the evening of the 21st, and attains his greatest southern declination 23° 27′ 36″.9.

Frequently in this month the solar beams, struggling through a large extent of vapoury atmosphere, feebly illumine the dreary regions of the northern world. When the air is refined by intensity of frost, this gloomy aspect of nature is changed,—the sun shines with brilliancy, and his rays clear, but cold, are reflected from the snow-clad landscape, and sparkle from ten thousand glittering gems. The contracted arch of his course is soon described, the brief day of winter speedily terminates, and night quickly resumes her lengthened sway.

What splendors does the night of winter reveal! the immensity of the starry firmament is spread out, and overawes the mind with the sublimity of the scene. The

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evenings of summer raise emotions of love and gratitude, and the mild twinkling of the stars, faintly shining through the illuminated atmosphere, is in perfect harmony with the soft breath of the season, the rustling of leaves, and the warbling of the nightingale; but in winter the stars seem to bend down their courses to this lower world; myriads shine forth with intensest brilliancy, and the deep azure sky teems with these demonstrations of Creative Power. The stupendous magnificence of the scene suggests thoughts of a more serious nature,—Eternity, with its mysteries, seem dimly presented to view, and the soul rejoices that it forms a part of the wondrous system.

When the pure soul is from the body flown,
No more shall night's alternate reign be known;
The sun no more shall rolling light bestow,
But from the Almighty streams of glory flow.
Oh! may some nobler thought my soul employ,
Than empty, transient, sublunary joy.
The stars shall drop, the sun shall lose his flame.
But thou, O God! for ever shine the same.

LUNAR PHENOMENA.

Phases of the Moon.

Full Moon,	7th day, at	27 min. after	8 night.
Last Quarter,	14th	31	noon.
New Moon,	22nd	36	2 morning.
First Quarter,	30th	9	8

Conjunctions of the Moon with the Planets and Stars.

December	1st, with Jupiter	at	8 morning.
	6th, ... Mars		4
	7th, ... 1. 2 δ in Taurus..		2
	9th, ... δ in Gemini.....		10 night.

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December 14th, with Saturn .....at 7 night.
19th, ... γ in Libra..... 2 morning.
22nd, ... Mercury ..... 3 afternoon.
25th, ... Venus 1
25th, ... Uranus..... 10 night.
26th, ... γ in Capricornus.. 6 morning.
28th, ... Jupiter ..... 9 night.

PHENOMENA PLANETARUM.

Mercury in conjunction with λ in Sagittarius on the 5th, difference of latitude 6′. Greatest elongation, as an evening star, on the 7th, angular distance 20° 52′. Stationary on the 15th, near 2 ξ in Sagittarius. Ascending node on the 17th. Perihelion on the 22nd. Inferior conjunction with the sun at 15 min. after 11 of the night of the 24th.

Venus in conjunction with 53 in Sagittarius on the 8th, difference of latitude 1′. Greatest south latitude on the 12th. In conjunction with Uranus on the 29th.

Phases of Venus.

The following are the proportions of the bright and dark phases of this planet:—

December 1st.—Illuminated disc = 10.1528
Dark part..... = 1.8472

Mars stationary near 1 τ in Aries on the 25th.

The Asteroids.

			Hrs. Min.		
Vesta,	2nd day.	Right Ascension,	14 59	S. Declin.	12° 2′
	10th	.....	15 16	.....	13 12
	18th	.....	15 32	.....	14 16
	26th	.....	15 49	.....	15 13
Juno,	2nd	.....	14 17	.....	7 31
	10th	.....	14 27	.....	8 2

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		Hrs. Min.		
Juno,	18th day. Right Ascension.	14 36	S. Declin.	8° 29
	26th	14 45	.....	8 51
Pallas,	2nd	23 27	.....	15 4
	10th	23 32	.....	15 4
	18th	23 37	.....	14 55
	26th	23 44	.....	14 37
Ceres,	2nd	2 14	N. Declin.	4 4
	10th	2 10	.....	4 28
	18th	2 8	.....	4 59
	26th	2 8	.....	5 39

Several strange opinions have been entertained respecting these beautiful bodies arising from the remarkable peculiarities of their motions and physical phenomena. Some have supposed that the immense atmospheres of two of them are derived from the "lost comet of 1770." Others have considered them as the fragments of an exploded planet, and that meteorolites, which occasionally fall to the earth, are some of the smaller masses. On this subject Mr. E. J. Lance has suggested that, as the component parts of meteorolites are similar to terrestrial substances, there does not seem any necessity for tracing them to so distant a source as a planet that once moved between Mars and Jupiter. A chemical process, the electric and galvanic fluid, will dissipate iron, nickel, sulphur, &c., which are the component parts of these aerial masses, and that as these, when thus acted upon, either naturally or artificially, lose a portion of their weight, it is probable that particles are taken up by the atmosphere, and, being re-combined by electric agency, fall to the earth at the instant of their re-combination in the form of meteorolites.

But these small planets are neither the wreck of a

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ruined world, nor are they wrapped in the newly acquired train of a comet wandering from its course. In the whole of creation, wherever the power of the Divine Being is evinced, there is also displayed harmony, and an arrangement for the general preservation; a beautiful connexion may be traced, uniting bodies apparently opposite in their natures, gliding through the various links which ascends from the minute to the stupendous —from the grain of sand, that fetters the proud ocean, to the rolling world, and all the vast orbs that move through immensity.

Jupiter in quadrature at 15 min. after 2 of the morning of the 12th.

Eclipses of the Satellites of Jupiter.

EMERSIONS.

First satellite,	2nd	day at	38	min. 37 sec. after	8 evening.
	9th	....	34	.... 38	10 night.
	11th	....	3	.... 40	5 evening
	18th	....	59	.... 43	6
	25th	....	55	.... 42	8
Second satellite,	19th	....	51	.... 5	6
	26th	....	27	.... 0	9
Third satellite,	30th	....	15	.... 31	6
Fourth satellite,	25th	....	47	.... 16	5

IMMERSIONS.

Third satellite,	1st	day at	11	min. 39 sec. after	11 night.
Fourth satellite,	8th	....	35	.... 46	9

FORM OF SATURN'S RING.

The sun will be in the plane of the Ring of Saturn, at 1h. after noon of the 1st day; the northern side of the ring visible, which is indicated by the sign + being prefixed to the semi-conjugate axis.

December 1st.—Semi-transverse axis — 39″.56
Semi-conjugate axis + 1 .90

Uranus, on the 1st day, near ι in Capricornus.

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SPHERE OF THE FIXED STARS.

Telescopic Objects.

Castor. The stars are both white, and of nearly equal magnitude; may be distinctly seen with a telescopic power of 100. No. 1, in the engraving of double stars.

Rigel, the double star in the foot of Orion, is visible with any power between 80 and 130, the small star is of a reddish tint. No. 2.

The triple star in the right fore-foot of Monoceros, requires a power of 120; it has been considered one of the most beautiful objects in the heavens. No. 3.

η in Corona Borealis, is an exceedingly delicate double star, and can only be seen under very favourable circumstances; it requires not only a very perfect, but also a very large telescope. No. 4.

Polar Star. The two stars are exceedingly unequal in size; this double star may be seen with any power higher than 40. No. 5.

ε in Boötes, is seldom seen distinctly defined with a power below 250; the smaller of the two stars is of a blue colour, the intensity of which increases in proportion to the proximity to the horizon. No. 6.

ε *in Lyra,* with the low telescopic power of 5, resembles Castor, when magnified with 450. With the power of 120, this beautiful double-double or quintuple star, may be seen as in the engraving of double stars.*

When it is proposed to view any of the minute double stars, such as η in Corona Borealis, let the telescope be some time before directed to Castor, or ε in Lyra; these

* Castor, No. 1, the upper figure on the left of the engraving. Rigel, No. 2, the upper figure on the right, &c.

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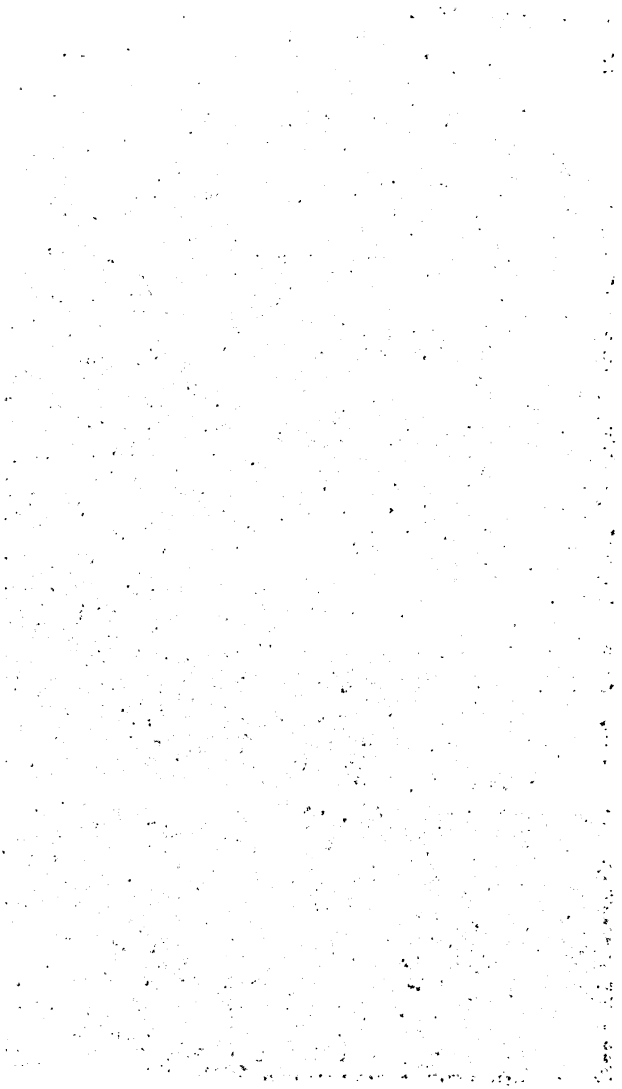

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Double Stars

The Quintuple Star in Lyra.

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should be kept in view for a considerable time, that the eye may acquire the habit of seeing such objects distinctly. The observer may next proceed to the beautiful triple star in Monoceros; by this time, both the eye and the telescope will be in a measure prepared for a still finer picture, which is η in Corona Borealis.

THE NEBULA IN THE SWORD-HANDLE OF ORION.

> Orion's beams! Orion's beams!
> His star-gemmed belt, and shining blade;
> His isles of light, his silvery streams,
> And gloomy gulfs of mystic shade.

The most remarkable nebula in the heavens, is that in the sword-handle of Orion. *(See the engraving).* Its irregularity of form suggests a resemblance to the head of a monstrous animal, with two horns of unequal lengths making a considerable angle with each other, the lower one having an easterly direction; an unequal brilliancy occurs throughout, as though one part was formed of accumulated luminous matter assuming, in some places the appearance of solidity: those parts which mark the outline of the mouth and eye of the fancied animal, may be better described by comparing them to deep indented bays, nearly of a quadrangular figure, well defined, and by its brightness, giving an intensity to the darkness of the sky that it surrounds, which in these openings (probably by contrast) appears of an unusual blackness. The brightest part has by no means a uniform aspect, but exhibits an unevenness, not unlike fleecy clouds, of a cirrus or mottled appearance, as if undergoing some change of separation. This bright region in some directions is abruptly terminated, and beyond it is seen a

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fainter region of nebulosity, while other parts gradually fade into that which is more diluted, till it subsides in the gloom of the neighbouring sky.

In these regions, are several minute stars, one cluster of four, on the bright part, of different colours, arranged in the form of a trapezium, near which two new stars have recently been discovered; five others are in the fainter part of the nebula, in the direction of the southern horn: other stars are scattered in and near the nebula, some of which are surrounded with the same milky luminosity. One most striking peculiarity is observed relative to these stars,—that the nebulous matter seems to recede from them, so as to leave a dark space between it and their brilliant points, as though the stars were either repelling the nebulous matter, or absorbing it; this is particularly the case with those that form the trapezium.

On one of the sides of the dark openings before referred to are filaments or fibres of light, which appear as if extending themselves to the opposite side; and on the sides of the head, in the direction of the northern horn, are faint streams of light, not unlike the tails of comets. The whole sky, for several degrees around, is not free from these appearances: two, close together, one of a spindle the other of a circular form; in the centre of the latter is a small star: a smaller nebula at the entrance of one of the dark openings, appears as if drawing together into a star.

This is but an imperfect description of the present appearance of this magnificent phenomenon, as seen by Herschel's 20 feet reflecting telescope:* there is every

* The accompanying engraving is copied from the *Memoirs of the Royal Astronomical Society.*

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reason to believe that it has undergone considerable changes since it was first observed by Huygens in 1656. A careful comparison of the descriptions and drawings of various astronomers seems to indicate that the bright part of the nebula once extended over a larger space, and that it is gradually receding towards the stars that form the trapezium. Similar changes are suspected in other nebulæ: in some instances smaller ones are formed by the decomposition of larger.

These mysterious luminous masses of matter may be termed the laboratories of the universe, in which are contained the principles of future systems of suns, planets, satellites, and other tributary bodies;—these elements, not in awful stagnation, but through the whole one spirit incessantly operating with sublime, unerring energy,—a process, going on which illimitably extends the fields of conjecture, as it slowly urges its awful way through this boundless range—these mighty movements, and vast operations.

How stupendous the consideration! Suns so immeasurably distant, that the light of those which are supposed to be contiguous, is three years in traversing the space that separates them; yet these—connected with each other, and innumerable others, on the simple principle of gravitation—these stars, so numerous, that in the small compass of half a degree a greater number has been discovered by the telescope than the naked eye could discern in the whole vault of heaven; and yet there is ground for the belief, that the whole of these millions and millions of stars would melt into a soft tint of light if supposed to be contemplated from some remote point of space!

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How grand is the consideration of this plenitude! Suns beyond suns; systems ranged behind systems in boundless perspective, and infinite progression,—no awful void, no dread vacancy, no dreary solitude: incessant streams of light, from myriads of systems, intersecting each other in every direction, and bearing to the boundless realms of the universe, evidences of creative power, benevolent design, and universal dominion!

THE BIRTH PLACE OF NEWTON.

As this month gave birth to Sir Isaac Newton, it may not be inappropriate to conclude with the following, from *Dr. Brewster's Life* of that great man:—

"Sir Isaac Newton was born at Woolsthorpe, a hamlet in the parish of Colsterworth, in Lincolnshire, about six miles south of Grantham, on the 25th December, O. S. 1642, exactly one year after Galileo died, and was baptized at Colsterworth, on the 1st January, 1642—3. His father, Mr. Isaac Newton, died at the early age of thirty-six, a little more than a year after the death of his father, Robert Newton, and only a few months after his marriage to Harriet Ayscough, daughter of James Ayscough of Market Overton, in Rutlandshire. This lady was accordingly left in a state of pregnancy, and appears to have given a premature birth to her only and posthumous child. The helpless infant thus ushered into the world, was of such an extremely diminutive size,* and seemed of so perishable a frame, that two women, who were sent to Lady Pakenham's, at

* Sir Isaac Newton told Mr. Conduit, that he had often heard his mother say, that when he was born, he was so little, that they might have put him into a quart mug.

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North Witham, to bring some medicine to strengthen him, did not expect to find him alive on their return. Providence, however, had otherwise decreed; and that frail tenement, which seemed scarcely able to imprison its immortal mind, was destined to enjoy a vigorous maturity, and to survive even the average time of human existence. The estate of Woolsthorpe, in the manor-house of which this remarkable birth took place, had been more than a hundred years in the possession of the family, who came originally from Newton in Lancashire, but who had, previous to the purchase of Woolsthorpe, settled at Westby, in the county of Lincoln. The manor-house of which the following is a sketch, is situated in a beautiful little valley, remarkable for its copious wells of pure spring water, on the west side of the river Witham, which has its origin in the neighbourhood, and commands an agreeable prospect to the east towards Colsterworth."

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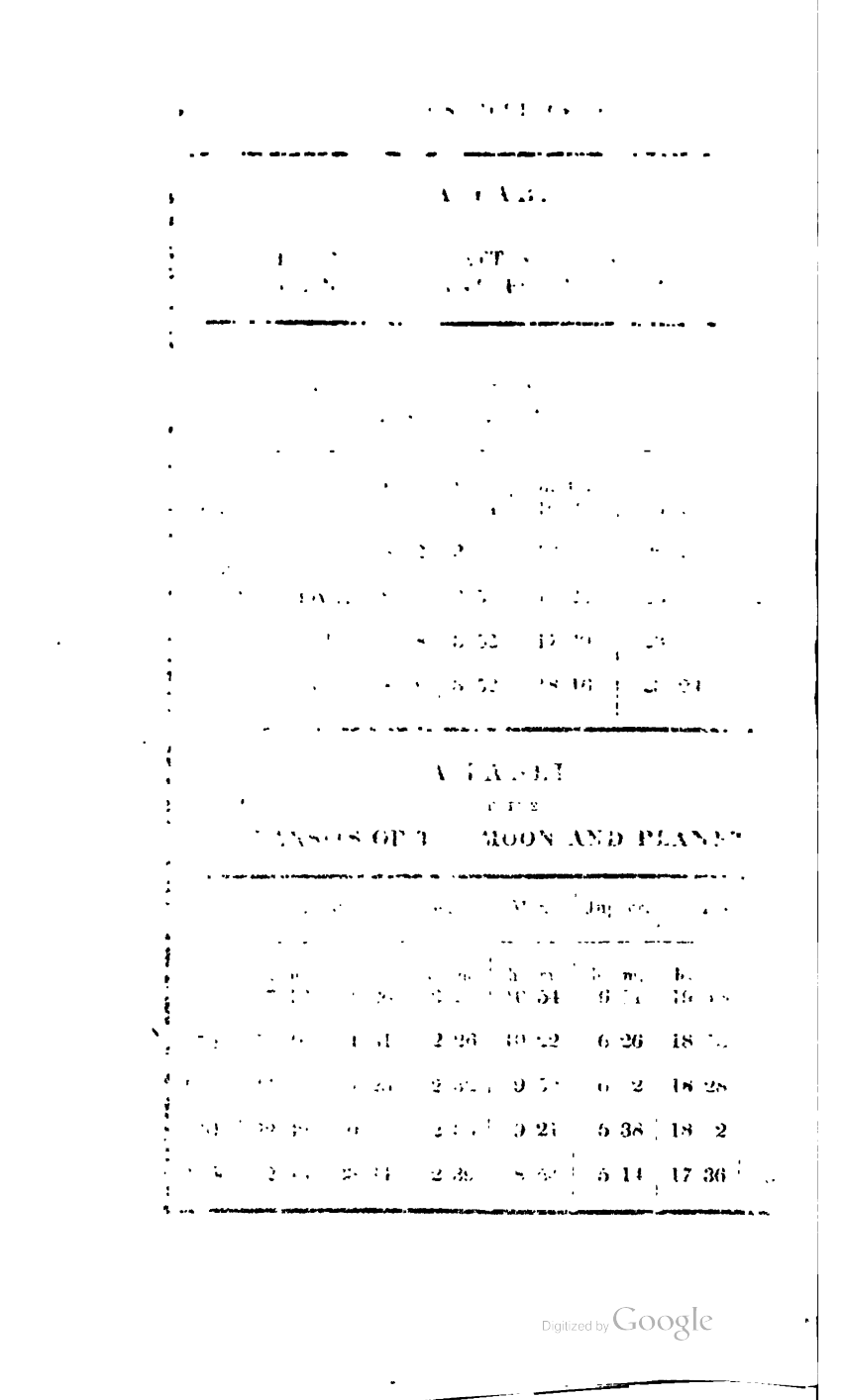

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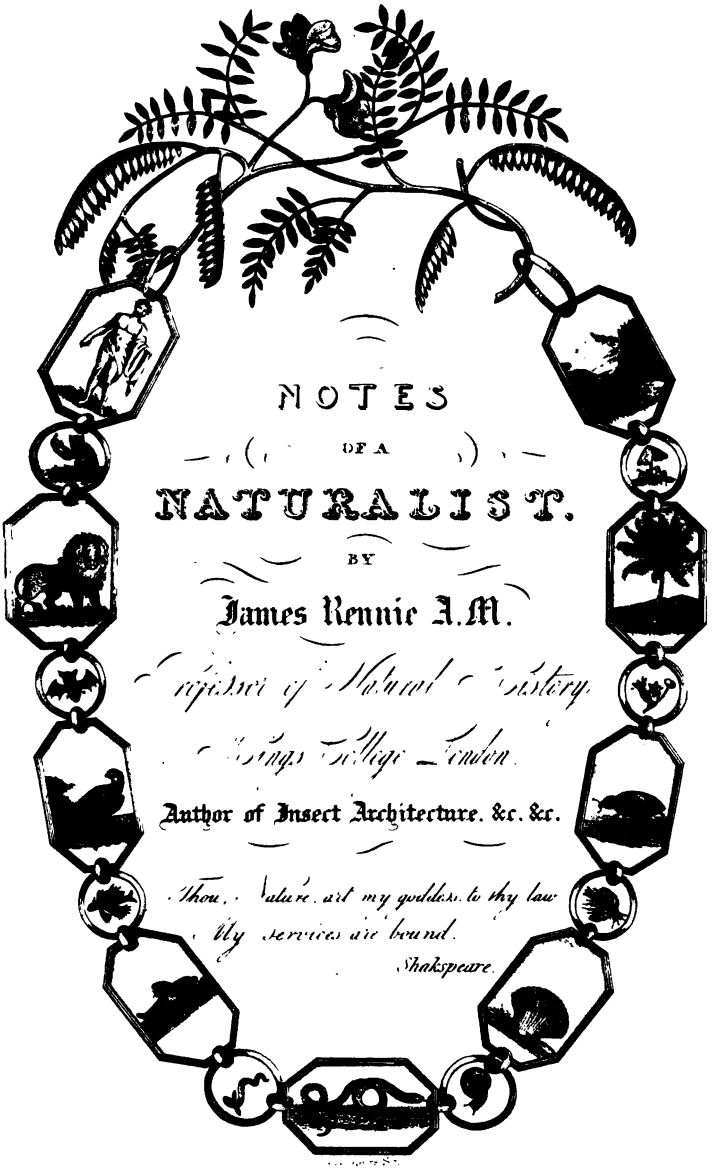

NOTES

OF A

NATURALIST.

BY

James Rennie A.M.

Professor of Natural History

Kings College London.

Author of Insect Architecture. &c. &c.

Thou, Nature, art my goddess, to thy law
My services are bound.

Shakspeare.

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A TABLE
OF THE
SUN'S RISING AND SETTING, RIGHT ASCENSION, DECLINATION, AND EQUATION OF TIME.

DECEMBER.	SUN rises.	SUN sets.	Right ascension in time.	Declination South.	Equation of time, subt. from apparent time.
	h. m.	h. m.	h. m.	° ′	m. s.
1st Saturday ...	7 56	4 4	16 30	21 52	10 37
7th Friday	8 2	3 58	16 56	22 39	8 10
13th Thursday ...	8 5	3 55	17 23	23 11	5 25
19th Wednesday.	8 8	3 52	17 49	23 26	2 29
					Add
25th Tuesday	8 8	3 52	18 16	23 24	0 31

A TABLE
OF THE
TRANSITS OF THE MOON AND PLANETS.

Day.	Moon.	Mercury.	Venus.	Mars.	Jupiter.	Saturn.	Uranus.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1st.	7 12	1 26	2 20	10 54	6 51	19 18	4 40
7th.	12 10	1 31	2 26	10 22	6 26	18 53	4 15
13th.	17 59	1 23	2 32	9 50	6 2	18 28	3 50
19th.	22 42	0 51	2 36	9 21	5 38	18 2	3 25
25th.	2 43	23 44	2 39	8 54	5 14	17 36	3 0

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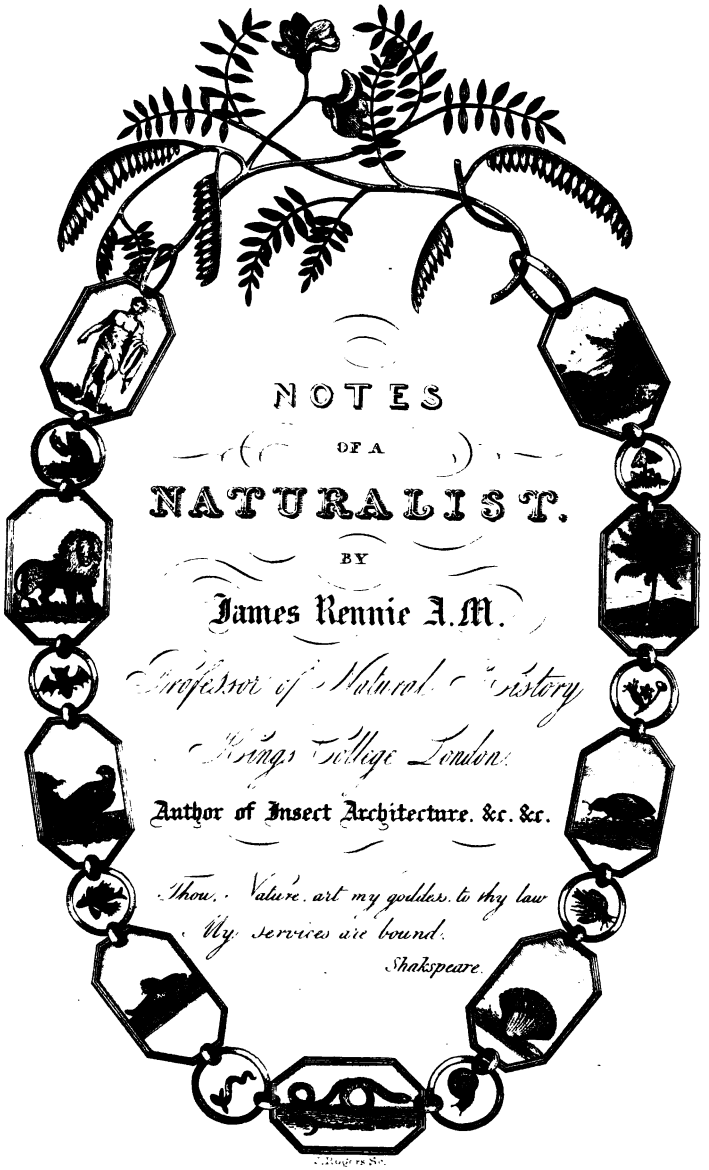

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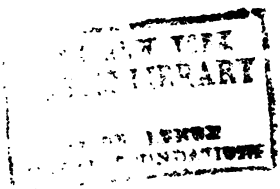

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INTRODUCTION.

A genuine naturalist, whose chief pleasure is concentrated in the investigation of the phenomena of the Creation, and in admiring the exquisite skill which he cannot fail to discover in the wise contrivances of Providence, wherever he turns his eye on "the heaven above, or the earth beneath"—need never complain of dull weather, or a bad day, since, in the dreariest day, or the most cold and comfortless weather, he may always find some subject of interesting research; for even if he cannot find the gay flowers, or the restless insects of spring and summer, he may trace these to their winter quarters; or he may observe the effects of the weather on the disintegration of rocks, and the formation or amelioration of soils; or investigate the laws which regulate the ever varying changes of the sky. Welcome then "old January, wrapped well in many weeds to keep the cold away;" welcome frost and clear weather; and thrice welcome the bracing exercise in the bright cold sunshine by day, and the blazing hearth, and the well stored library at night. With all these "appliances," we think it will go hard with us if we cannot, as old Ben Jonson says,—

> ——With some delight the day outwear,
> Although the coldest of the year.

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We think it right to inform our readers, that in the little sketches of Natural History which we shall now introduce under the successive months, we deem it an improvement on our previous plan, to drop the form of continuous narrative, and present them with detached subjects, more in the way of studies, than as pictures, which our space is too confined to admit of being finished to our liking. We hope, that in this way, we shall be able to throw more interest into this department; both from our studies in the fields, and from our occasional reading when confined by rain or rheumatism in doors than we could otherwise accomplish; while at the same time we shall, perhaps, better sustain the leading character which our little work has borne since its commencement of popularizing Natural History. We may boldly say, indeed, that while this delightful study had been rendered unfashionable by the dry, tasteless productions of the Linnæan school—now happily fast sinking into oblivion, we were almost solitary in following the more interesting and philosophical path of our own great Naturalists — Ray, Lister, Derham, White of Selborne, and Colonel Montagu.

For similar reasons to those which induced us to avoid the bad taste, and worse philosophy of the Linnæan school, we shall take care not to bewilder our readers with the wild fancies of what we may call the *Hypothetical* school of Naturalists, whose disciples are at present so eager to gain proselytes. The ostensible object of this school is to discover a chimera, which they call *the Natural System*, but instead of a Natural System, the pursuit has been hitherto productive of little besides absurd and unphilosophical speculation, both in Britain and on the

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Continent. One of the most celebrated of these speculators for example, (M. Savigny), gravely tells us, that the sucker of a gnat, or of a butterfly, is not a sucker at all, but two pairs of *imperfect* jaws which Nature has glued together, and thereby rendered them "totally useless," as jaws.* He might as well have said, that a metal syringe is not a syringe at all, but a pair of pincers soldered together, and totally useless as pincers!! Another leading man in this school (M. Geoffroy St. Hilaire) tells us, that what we ignorantly call the legs of a crab, are not legs at all, but the ribs which have *developed themselves* [when? may we ask] out of the body, as has the back-bone *(vertebræ)* which has now become a shell. On the same absurd principle, we might say with as much reason, that our ribs are not ribs at all, but feet which have ensconced themselves under our skin, as has our back-bone from being formerly a shell, *developed itself* inwards, and become a bone!!! Another still more fanciful speculator (Mr. Mac Leay) proceeds apparently on the old Grecian idea, that a circle is the most perfect of figures, and having set his mind agog upon this fancy, he sees circles where nobody else can see them. For example, all plants and animals he looks upon as disposed in circles of fives:—bees,—butterflies, and beetles, as well as oysters and clovegilly-flowers, being each as regularly placed in their respective *quinary* circle,

"Cycle, and epicycle, multiform and mixed,"

as the brass circles of an armillary sphere, or the rings of a Chinese juggler.†

* Mem. Anim. sans Vertebres, Pt. I. See also Swainson in Loudon's *Encyc. of Agricul.* 2d Ed. p. 1113.

† See Introd. to Montagu's *Ornith. Dict.* 2d Edit. *passim.*

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What Herschel has so well said of the Greek philosophers, who spent their time in similar fancies, applies most pointedly, we think, to our modern speculators. "We are struck," he says, "with their loose and careless consideration of external nature, their grossly illogical deductions of principles of sweeping generality from few, and ill-observed facts, in some cases; and their reckless assumption of abstract principles having no foundation, but in their own imaginations, in others; mere forms of words, with nothing corresponding to them in nature, from which, as from mathematical definitions, postulates, and axioms, they imagined that all phenomena could be derived, and all the laws of nature deduced."*

It is indeed, deeply to be deplored, that while the Baconian induction has been productive of such splendid results in Astronomy, Chemistry, and Natural Philosphy, we should, in Natural History, retrograde to the hypothetical nonsense of the Grecian schools; and that too, just at the favourable moment when the world has become sick of the meagre and inacourate Linnæan catalogues. We trust, that in the following sketches, the reader will meet with few traces of any of these schools, and if he does not find deep philosophy, he may seldom be disappointed in meeting with instructive amusement.

* Lardners's *Cyclop. Study of Nat. Phil.* p. 105.

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JANUARY.

WINTER SONG BIRDS.—It is a common occurrence, which few can have failed to observe, for caged birds of various species to sing during winter, in consequence of their being supplied with abundance of food, and protected from the inclemencies of the weather; since otherwise, very few of these would sing a note. But when thus protected, and well fed, Mr. Sweet has had many of our most delicate migratory birds in full song for the greater part of the winter, particularly the black cap *(Sylvia atricapilla)*, the white throat *(S. cinerea)*, and the nightingale *(S. luscinia)*. There are, however, two of our best known birds, who seem to enjoy the cold of the winter months little less than the sunshine of summer, if we may judge by the merry glee which they then display: we allude to the wren *(Anorthura communis*, RENNIE), but particularly to the redbreast *(Sylvia rubecula)*. White, in his Natural History of Selborne, states, that the wren sings all winter, except during frost; but we have heard it not only singing during intense frost, but what is still more wonderful—during a fall of snow, and that not in a solitary instance, but frequently. We observed this more than once, during the

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most inclement days of the preceding winter, which was more than usually severe.

MIGRATION OF AMERICAN AND EUROPEAN BIRDS.—The numerous interesting facts connected with the migration of birds in the splendid works of Wilson and Audubon, lead us to conclude, that the annual migration is much more general in North America, than in Europe, owing no doubt, to the greater severity of the winters there, which would render it impossible for the soft-billed birds to find food. Even in our own country, some of those, which do not migrate, are, in severe winters, exposed to great privations. At first view, it appears not a little singular, that, among birds differing very little in habit, some should remain with us, and others should migrate; but a slight knowledge of Natural History will lead to a solution of the singularity. Soft-billed birds, like the robin, depend upon caterpillars and worms for their principal food; and, as many species of caterpillars live through the winter, such birds are enabled to procure food. In open weather, also, earthworms occasionally make their appearance, as well as small slugs. The redbreast, accordingly, and more particulary the wren, may be seen prying with a keen eye into the roots of trees and shrubs, for the caterpillars, which lurk there, and hopping over the grass-plots in gardens, to pounce upon an earth-worm, that may have strayed from its hole; while the wag-tail (*Motacilla lotor*, RENNIE), endeavours to pick up a scanty meal of the small winter gnats which occasionally play about running water in fine weather. The winter supply, however, of live insects, would be far from sufficient for the numerous soft-billed birds, which haunt our woods and hedges in

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summer; and therefore, it has been so ordained, that the nightingale, the white-throat, and many others, should migrate during the winter to a warmer climate, where they can be in little danger of perishing by famine. The swallows, fly-catchers, and other birds, which capture insects on the wing, would obviously be starved to death at the very commencement of the cold weather.

UTILITY OF SNOW.—Several of our native plants, such as groundsel (*Senecio vulgaris*), chickweed (*Alsine media*), the barren strawberry (*Dalibarda fragariodes*, MICHELI), the red dead nettle (*Lamium purpureum*), and furze (*Ulex Europæus*), put forth blossoms in defiance of the cold; they rarely, if ever, at this season, perfect their seeds. It is highly probable, we think, that these and other flowers which brave severe cold, have the power of generating organic heat; for many of them are so delicate in texture that no plausible supposition could be made respecting the rigidity of their fibres or of their sap vessels. Some plants, indeed, manifest a degree of heat enough to affect the thermometer, and all vegetables are some degrees warmer than the surrounding air; a circumstance which enables them to resist the colds of winter. The same fact holds true of seeds which have been self-sown the preceding summer and autumn, and remain, through the winter, on or near the surface of the ground—retaining their life in defiance of frost—till the reviving warmth of spring excites them to germinate.

The fact appears not a little singular, that alpine plants, such as auriculas, some saxifrages, &c. should be of difficult culture in our climate, and are not unfrequently destroyed by our winters, whilst they flourish in

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their native snows; but it should be observed, that, in the Alps, where, growing wild, they are, throughout the winter, covered with a complete coating of snow, which, from not being a rapid conductor of heat, is instrumental in the earth's not parting quickly with its warmth,—in the same manner as a woollen garment prevents the escape of heat from the body,—this protects them through the cold season; whereas, in our climate, these plants are exposed alternately to the severe influence of frost, unprotected by the snow, and to long continued rains. The frost, injuring the structure of the leaves, they become readily rotted by the wet; and, although the plants are not often entirely killed, they are too much injured to ensure a good show of bloom. It is necessary, for the cultivation of the finer sorts of auriculas, &c. to imitate, as far as possible, their native climate, by protecting them in a frame or shed, both from the severe frosts and wet. It is, however, to be remarked, that our climate opposes another and a serious objection to the easy cultivation of this class of plants, arising from the great variation of temperature. Even during the winter months the plants frequently commence growing before the spring arrives, and thus are rendered more obnoxious to the succeeding frosts; and in addition, the strength of the plants (which should be reserved for the great effort to be made in the spring) is exhausted before its due season—whilst in the Alps they lie entirely dormant, until the sun, at once, melts the snow, and calls them into life and blossom. To prevent the plant growing out of its season, it is found best to place the pots in a part of the garden exposed to a northern or western aspect.

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There is a remarkable fact mentioned by M. de la Roque, with respect to the cedars of Lebanon, which on their native mountains, as soon as the winter snows begin to fall, change their irregular diffusion of branches into a regular uniform pyramidal cone; but as the snows melt with the return of spring, they again spread out their boughs. We know not whether the cedars in this country have similar habits.

The check given to the flow of sap and increase of growth in trees by the winter's cold, is the cause of those circles which appear on cutting a tree across, and by which its age may be counted. That cold is the chief cause of this, appears from the circles being more broad and distinct on the northern side of the tree.

SEA-SWELLS.—If a rope of several fathoms be suspended at some height, and not drawn very tight, and one end beat by the hand into the form of an ω, and suddenly let go—a waving motion will be communicated through the whole extent of the rope of a similar ω form, though not quite so distinct. After arriving at the opposite end of the rope, the same waving motion will travel back again, diminishing in intensity as it proceeds, precisely in the same way as the pendulum of a clock will do when suspended from a nail. Those who can understand this will find no difficulty in comprehending the swell produced in the sea for some time after it has been blowing hard. The weight of the water, or the force with which it tends towards the centre of the earth, is to it what the stretching is to the cord, and it is the wind acting on the surface, which raises the water and throws it into the form of an ω, as in the former instance. Now we have seen that the

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waving motion of the rope continues after the hand which produced it has been removed; in the same way the waving motion of the water continues after the wind has ceased to blow, and even passes onwards to those parts of the sea where the wind has not blown at all. The waves also, when they strike the shore, travel back with diminished motion, precisely like the waving motions of the rope, and by meeting the waves coming from the open sea, raise them higher from the collision. Dr. Arnott observed, in the eastern ocean, an instance of "waves of extraordinary magnitude rolling along during a gloomy calm, and therefore with unbroken surface, appearing like billows of molten lead. It was afterwards ascertained that at that very time, about a hundred miles to the north-east, four of the finest ships of the India Company were perishing in a storm."

VARIETY OF COLORS IN DOMESTIC ANIMALS.—It is a mistaken opinion that the colors of wild animals are uniform, while those of domesticated animals are diversified, though in a wild state, the diversity is less striking. Much of this depends on the attention paid to the propagation of peculiar domestic breeds when any remarkable colored variety has been accidentally produced. It is thus that the breed of white mice and flap-eared rabbits is continued, whereas in a wild state these peculiarities would probably soon be lost. I may mention two facts regarding diversity of color among innumerable others which have struck me. The common geometric spider of our gardens (*Epeira diadema*, WALCK.) is so varied that scarcely two individuals, even of the same brood, are found alike, varying in shade from silver-grey to deep chocolate-brown, and

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from pale-yellow to brick-red. Again, the eggs of the sparrow (*Passer domesticus*, RAY) vary so much that the boys in Kent imagine them to be of different species according as they find their nests in trees, in ivy, or under the tiles of a house. Sometimes these eggs are nearly uniform in color, with no markings. While at other times they are thickly or sparsely streaked, and spotted with greyish black on a greenish or blueish white ground. It has been recorded by Mr. Young, that a blackbird, and also a linnet, have been observed to become white in consequence of fright, in the same way as the human hair has been known to become grey in a single night through grief. That food, however, will sometimes produce striking changes of color, appears from the fact of madder (*Rubia tinctoria*) tinging the bones of animals fed upon it of a red color, and by alternating this with other food, from week to week, the bones will exhibit concentric circles of white and red. (BELCHIER, *in Phil. Trans.* 1736, *and Comment. de Reb. Lips.*)

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FEBRUARY.

HOAR-FROST AND THAW.—That the interior temperature of the earth, at least in places at no great depth, in this country, is seldom below 48° Fahr. is proved by the non-freezing of springs during hard frost, as well as by hoar-frost, and snow lying longer unmelted on dry cow-dung and pieces of wood than on grass and gravel walks, which are more rapid conductors of the heat passing from the interior of the earth. But in cases where the sun's heat can act in conjunction with the heat of the earth, the effect produced is often remarkable. We observed a striking instance of the latter during last winter. A heavy hoar-frost had been deposited during the night on a grass field, bounded by a brook, which had undermined the bank and produced all along what is called in the north a *scar-brae*, and by the French an *escarpment*. As soon as the sun rose, it acted in conjunction with the interior heat of the earth, on the upper edge of this escarpment, and produced a rapid thaw of the hoar-frost for about two feet all along as if a stream of hot water had passed over it, while the grass beyond remained untouched.

The disappearance of frost, and the melting of the snows, accompanied with copious rains, are intended by

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nature to loosen the soil for the expansion of the roots of plants, and, at the same time, to supply the fluids which are to form the sap. Where chalk, lime-stone, or marble, abounds either in rock masses, or diffused through the soil in form of sand or gravel, the thaws of this season tend to disintegrate the more compact portions, and set free their carbonic acid, which being washed down to the roots of plants by rain, constitutes an important portion of their nutriment, or at least serves as a stimulant to excite the absorbent orifices of the fibrillæ to imbibe nutritive juices.

There cannot be finer subjects for the microscope than the crystals of water, of which snow and hoar-frost are composed; and if beauty, as has been maintained, consist in regularity amidst variety, snow-flakes, seen by aid of the microscope, must be considered highly beautiful. Their variety is endless, but the principal forms are stars of lamellar, spicular, or pyramidal crystals, from one-third to one-thirty-fifth of an inch in diameter.

ALLEDGED GROWTH OF STONES.—It would appear, from Mr. White's using the word "grow,"* that he adopted the current opinion respecting the growth of stones, which, it is probable, originated with the celebrated French naturalist, Tourneforte. He inferred that rocks grow, from observing, when travelling in the Levant, that names cut in the famous grotto of Antiparos in the Grecian Archipelago, appear a few years afterwards in *alto relievo*. Linnæus also laid it down as a first principle, that, "stones grow;" while "vegetables grow and live; and animals grow, live, and feel."

* *Nat. Hist. of Selborne*, Lett. iv.

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But except in the case of depositions of stony matter from an aqueous solution, such as occasions the relieving of the names cut in the rock at Antiparos, and the incrustation of wigs, birds' nests, birch brooms, and other things exposed to its influence, which I have seen at Matlock in Derbyshire,—stones and rocks may more correctly be affirmed to decrease than to increase, subjected as all those which are uncovered must be to the repeated action of rains and frosts. In the beds of rivers, and the basin of the sea, the incessant motion of the water must, in the same way, produce a constant wearing down into sand of the hardest rocks and stones which are there deposited.

MOUNTAINS.

Come, hie we to the mountains: O! once more
I long to swathe me in the streaming mist,
That wreathes its tresses beautifully hoar
Upon the crested mountain—to be blessed
With still sweet solitude, where the stream is kissed
By woods that bend them o'er it lovingly;
And,—free to rhyme and ramble as I list,—
To wander 'mid the thousand thoughts, that lie
Slumbering by lonely lake, or vision'd in the sky.

REV. J. G. CROSBIE.

We have loved mountains since our childhood. We can picture now in our imagination, as vividly as if it lay before us, though it is far distant, a magnificent ridge of mountains heaving their peaks through mid-air, like the azure ruins of a summer cloud which the winds had strewed on the horizon,—a scene, which in our youth, was ever in view, and day by day charmed us into admiration. In fact, we are acquainted with no object in nature more fitted than mountains to awaken emotions of sublimity, and raise the thoughts to God, which ought to

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be the first end to which all our knowledge and all our feelings should be directed. Every science, indeed, and every contemplation of the works of creation leads naturally to religious thought; from the study of the plant that grows beneath our feet, to that of the host of heaven above us, who perform their stated revolution in majestic silence, amid the expanse of infinity. With reverential awe, every great or elevated mind will approach to the study of Nature, and with feelings of adoration and gratitude, he will receive the illumination that gradually opens upon his soul. It is not the lifeless mass of matter, he will then feel, that he is examining; it is the mighty machine of eternal wisdom: the workmanship of Him in whom everything lives and moves, and has its being. Under an aspect of this kind, it is impossible to perceive the laws of nature, without perceiving at the same time, the presence and the Providence of the lawgiver,—and thus it is, that in every age, the evidences of religion have advanced with the progress of true philosophy; and that science, in erecting a monument to herself, has, at the same time, erected an altar to the Deity.

MOSSES.—It may be remarked, that mosses are now in their fullest verdure, and many of them advanced to fructification, being destined, it would appear, to keep up the green tints of nature, when all other vegetation is dead or slumbering, and to protect the roots of larger plants from vicissitudes of cold, as well as of heat, and from too much moisture, as well as too great dryness. Marsh and water mosses have a tendency to produce soil, and to convert morasses into solid land, while they effect the purification of the water in which they grow

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by absorbing the putrescent substances with which it may be corrupted, and by exhaling oxygen in exchange. With the exception of *Polytrichum commune*, *Bryum ligulatum*, and *Hypnum dendroides*, and *H. alopecurum*, few mosses send roots into the soil beyond a few lines, and cannot, therefore, impoverish it so much as has been supposed. Mosses, indeed, seem like the air-plant of India, to derive their chief nourishment from moist air —a circumstance which may account for their growing on trees, walls, and bare rocks, where there is little, if any soil to support vegetation.

INGENUITY OF MOLES.—We may remark, that in districts where moles abound, some of the mole-hills are greatly larger than others. When a hill, of enlarged dimensions, is thus discovered, we may almost be certain of finding the nest or den of the mole near it, by digging to a sufficient depth. The fur of the mole, is admirably adapted, from its softness, and short close texture, for defending the animal from subterraneous damp, which is always injurious, more or less, to non-amphibious animals, and in this climate no choice of situation could entirely guard against it. It is a singular fact, not generally known, we believe, that there are no moles in Ireland. May not the greater dampness of the climate account for their not thriving there? Moles, indeed, are partial to fields within the reach of water, they like to have their galleries in dry banks, or the more elevated parts of fields, where they are not in danger of being flooded. An instance, in proof of this, fell under our observation during winter. In the woods adjoining Shooter's Hill, there are considerable patches of swampy ground, which are partially flooded in rainy

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weather. On passing near one of these swamps, we were struck with the unusual size of a mole-hill, which we at first imagined to be an Ant's nest. It was, indeed, rather a singular locality for a mole-hill, moles being seldom found in woods, and much seldomer in swamps; but, though it was as large as six ordinary mole-hills, there could be no doubt that it was one. Upon removing a portion of the upper layer of the mould, the reason of its extraordinary elevation was at once explained; a circular gallery, having been constructed on the highest part of the mound, and covered only by about two inches depth of mould. As this gallery was, at least, two feet above the level of the swamp, it was out of the reach of any common inundation.*

The mole begins to be busy in working his subterraneous galleries in pursuit of earthworms, from which before he eats them, he ingeniously strips off their skins, by making an opening, and through this squeezing out the contents of the body, which alone he selects for a *bonne bouche*. The earthworm, it may be remarked, is so instinctively afraid of the mole, that any motion of the earth, similar to that caused by the burrowing of the mole causes it to make all haste above ground—a circumstance well known to fishers, who procure the earthworms for bait by moving a spade or a stake too and fro in the ground.

* J. Rennie in *Lond. Mag.* Aug. 1829.

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MARCH.

SPRING-COLDS.—There cannot be much fear of the person, who, like Spenser's March (*Faerie Queene*, vii. 7), shall bend his brow to the blast, and shall dig his rood of land and sow his bushel of seed, whether the bleak North or the biting East wind scatter consumption and death among the feeble inmates of the parlour, or the half-famished tenants of the hut or the garret. Free exposure to every wind that blows, provided always that requisite clothing and active exercise be attended to—will do more to banish coughs and consumptions than all the fox-glove or Iceland-moss that ever grew, or all the bleeding, blistering, or *Long* rubbings that were ever tried. Confine yourself to a warm parlour, and you will shudder at every blast, and probably catch a bad cough or a cold fever at every slight change of weather, and will find it dangerous to venture out of doors during the cold and chilly days of winter and spring; but by free exposure and brisk exercise, you may learn to set the weather at defiance, and put on the vigorous and healthy look of the young spring, instead of the church-yard cough and undermining fever of age and debility.

HABITS OF THE EARTH-WORM.—According to

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White, of Selborne, earth-worms are "great promoters of vegetation, which would proceed but lamely without them, by boring, perforating, and loosening the soil, and rendering it pervious to rains and the fibres of plants, by drawing straws and stalks of leaves and twigs into it; and most of all, by throwing up such infinite numbers of lumps of earth called worm-casts, which, being their excrement, is a fine manure for grain and grass." He adds, "earth-worms make their casts most in mild weather, about March and April."* The fact is, that the casts are not their excrements, but a sort of masonry, somewhat rude, indeed, but not the less efficient in protecting their burrows, both from too much rain, which would destroy them, and from the intrusion of enemies, (*Carabidæ, Staphylinidæ*, &c.) The reason that they are more observed in spring, seems to us to arise from their anxiety to protect their eggs, which are then deposited, as well as from the scarcity, at this period, of leaves and other vegetable refuse. They always prefer some vegetable matter for the closure of their hole, when it can be obtained, because, when it has arrived at a certain stage of decay, it forms their choicest dainty; and hence it is that they become so destructive in gardens to seedling and pricked-out plants by unrooting them and dragging them into their holes. But they are not contented with a leaf, a blade of grass, a straw, or a fallen blossom, till they have first constructed an out-work of clay into which these may be fitted.

By cautiously removing the leaf-door and the clay

* *Nat. Hist.* Selb. i. 14, 279. Knapp, *Journal of a Naturalist*, p. 343, 4th Ed.

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out-work of an earth-worm's hole, we have repeatedly seen it reconstructed. The worm, in such cases, perceiving from the free entrance of air and light, that the barricade is gone, advances (not without manifesting some fears of danger) to the threshold, and soon sets about repairing the damage. For this purpose it sucks a few grains of earth into its mouth, moistens it as the swallow does its mortar, with saliva, and using its broad tongue for a trowel, plasters it round the mouth of the hole, smoothing it very neatly on the inside, but leaving it rough without like the swallow's nest. When it has built this clay vestibule to its mind, it next searches about at greater distance for a leaf or a stone, and, if it do not find one, it is forced to complete the closure with clay. In the same way we have observed, that a marine species (*Lumbricus marinus*, LINN.), which lives in the sands within the tide-mark, being no less afraid of drought than the earth-worm is of rain, (both dislike light), constructs a similar out-work of agglutinated sand over its hole every time the tide ebbs*.

THE IRISH SHAMROCK AND THE SCOTCH THISTLE.—When I was in Ireland some years ago I was shown, by an amateur, a plant of the spotted trefoil (*Medicago maculata*), which had been brought from a great distance, and kept in a garden-pot with as much care, as the *genuine* Irish shamrock, in the same way as I have frequently seen the cotton-thistle (*Onopordum Acanthium*), cultivated in gardens in Scotland as the *genuine* Scotch thistle. A Scotch nursery-man, in the vicinity of London, had a very different plant

* *Architecture of Birds*, p. 103.

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from the latter given to him as the national flower of his country, and from being less acquainted with indigenous than exotic botany, he did not recognize it as the milk thistle (*Silybum marianum*, GŒRTNER), a very common weed around the metropolis, but gave strict orders to his foreman to have it carefully attended to. It appears to us, however, that it is no less vain to hunt after the actual botanical representatives of these national floral emblems than after the griffins, dragons, and blue lions of heraldry. Yet, if readers are not satisfied with this, I think that some very common species ought to be fixed upon rather than one which is rare, and on this principle the spear-thistle (*Cnicus lanceolatus*), seems the best entitled of any to be the emblem of Scotland: the cotton-thistle I never met with wild in the country, except near gardens where it is commonly reared as the *real* Scottish thistle, though it may perhaps be found in some localities; and the milk-thistle I only saw once below the rocks of Dumbarton castle—said by tradition to have been brought thither by Mary Queen of Scots, —while the spear-thistle abounds by every road side. The usual heraldric figure, however, I confess, is more like the musk-thistle (*Carduus nutans*), which is not indeed rare, but is not generally diffused. If we take the practice of the Irish, in selecting a sprig of shamrock to decorate the hats on the 17th of this month for our guidance, as to the species, I should be more inclined to say the white-clover (*Trifolium repens*), is the genuine shamrock, than a plant of such confined locality as the one alluded to above. The Irish themselves, indeed, seem not to make any discrimination between the various species of trefoil;—and if we go to

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the traditional origin of the emblem—St. Patrick's selecting the leaf to indicate the holy Trinity—we may well conclude that he picked up the first trefoilated leaf which came to hand. From these considerations, I am not inclined to agree with Mr. Bicheno, that wood-sorrel *(Oxalis acetosella)*, is the true Irish shamrock. The flower, for one thing, has nothing to do with the emblem; and, even if it had, it would be as hard to find a wood-sorrel as a white-clover in flower so soon as St. Patrick's day, since it does not blow before April. Besides the oxalis is not a very common Irish plant; for though I have seen it in Derry and in Antrim, and in the woods about Blarney, near Cork, there are extensive districts where it does not occur at all.

It may be well, however, to give some of Mr. Bicheno's reasoning in his own words. "The term shamrock" he says, "seems a general appellation for the trefoils, or three-leaved plants. Gerard says, the meadow-trefoils are called in Ireland shamrocks; and I find the name so applied in other authors. The Irish names for *trifolium repens* are seamar-oge, shamrog, and shamrock. In Gaelic, the name *Seamrag* is applied by Lightfoot to the *Trifolium repens*; while in the Gaelic Dictionary, published by the Gaelic Society, under the word *Seamrag* many plants are mentioned to which this word is prefixed as a generic term, as *Seamrag chapuill*, purple clover; *Seamrag chré*, male speedwell; *Seamrag m'huire*, pimpernell. I conclude from this, that shamrock is a generic word common to the Gaelic and Irish languages, and, consequently, not limited to the *Trifolium repens*."

He infers from the following notice in Fynnes Mor-

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rison, so late as 1598, that the shamrock was a spring plant,—"Yea, the wilde Irish in time of greatest peace impute covetousness and base birth to him, that hath any corn after Christmas, as if it were a point of nobility to consume all within those festival dayes. They willingly eat the hearbe *shamrocke*, being of a sharp taste, which, as they run, and are chased to and fro, they snatch like beastes out of the ditches."

This, however, would rather seem to mean water cresses than wood sorrel, which certainly does not grow in ditches. Again he says, "nor is it difficult to account for the substitution of the one plant for the other. Cultivation, which brought in the trefoil, drove out the wood-sorrel. The latter, though now not common, was, doubtless, an abundant plant as long as the woods remained; but these being cut down, partly by the natives to supply their wants, and partly, also, by the government to prevent their enemies from taking refuge in them in the wars, the commonest plant became the scarcest, and it was more easy to obtain that which was cultivated. Upon the whole view of the case, I apprehend it can hardly be doubted, that the *oxalis acetosella* is the original shamrock of Ireland."*

For the reasons above given, I certainly *do* doubt Mr. Bicheno's conclusion.

SEED TIME.—The copious rains of February, with which the soil has in most seasons been drenched, though well adapted for making the roots of perennial plants send forth shoots, would be unfavourable if continued, for the germination of seeds, which require to be moist,

* Journal of the Royal Institution, May 1831.

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but not soaked, in order to spring well. It is this which renders dry weather at this season so valuable, and which gave rise to the proverb, that "a bushel of March dust is worth a King's ransom." When wet weather continues during this month, seeds are apt to fail by becoming mouldy or by rotting; whereas when they are got in dry, they are more certain to germinate vigorously. Self-sown seeds, for the same reason, seldom produce such fine plants as those reared from seeds which have been carefully dried, and kept out of the ground during winter—a fact with which florists are well acquainted, as self-sown flowers soon lose all the beauties acquired by cultivation, and return to the character originally belonging to them in the wild state.

SOLITARY BEES.—Those who are desirious of witnessing the disclosure of some of the early solitary bees, should repair during a sunny morning to some warm sand bank with a southern exposure, where they are almost certain of being gratified with seeing some of these (*Anthophora retusa*, &c.) breaking through the clay walls with which the mother bee had the preceding season so carefully enclosed them. I have seen them at Charlton in Kent, as early as the first week in this month, playing about their native holes as briskly as if it had been the middle of May. The main brood, however, were not yet disclosed, but awaited the more genial weather of advancing spring. In the locality just alluded to, many of the cells of these bees were infested with the grubs of a parasite beetle, whose habits I have not seen recorded. It would appear, that the eggs of these beetles are deposited after those of the mother bee, and when hatched, that they feed upon her

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progeny. The beetle grub is hairy and brown, and the perfect beetle (the species of which I have not yet ascertained) is black marked, with two cross waving lines of pure white. These grubs will not touch the perfect bee, and some for which I could not procure bee larvæ, lived without food for six months, remaining as plump and lively as when first taken from the bee cells which they had first invaded.

MEMORY OF BEES.—It is interesting to remark, that how far soever bees may wander from their hives (and a mile or two is not uncommon)—they always find their way home. According to the poetical creed, this is done *memoriter* by the insect retracing all its wanderings—a doctrine which Rogers, in his *Pleasures of Memory*, has prettily illustrated:

> Who guides the patient pilgrim to her cell?
> Who bids her soul with conscious triumph swell?
> With conscious truth retrace the mazy clew
> Of varied sweets, which charmed her as she flew.
> Hail, Memory hail! thy universal reign
> Guards the least link of Being's glorious chain.
>
> PART I.

Instead, however, of this tedious process of retracing their way by means of memory, bees uniformly fly from great distances directly to the hive, as straight as a ball from a musket, and with extreme rapidity. But in departing from the hive upon an excursion, they, for the most part begin by examining the flowers in their immediate neighbourhood. Bees, indeed, seem to possess so very little of the power of memory, that an individual may be seen to search the same blossom two or three

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times in the course of a few minutes in utter forgetfulness of having already plundered it of its honey.

THE CHIFF-CHAFF.—The earliest migratory bird which we have observed arrive in spring, is the Chiff-Chaff *(Sylvia hypolais)*, which may be heard in every patch of wood or copse near London, early in March, repeating its monotonous chaunt, as if it were calling its more tardy companions to hasten their migrative journeyings. Though there is certainly little music in its unvaried note; yet, from its association with the blowing of the primrose, the violet, and other early flowers, it becomes little less pleasing than the similar monotony of the cuckoo, inseparably associated with blossomed hawthorns, or the loud call of the Wryneck, which betokens the near approach of "the leafy month of June."

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APRIL.

THE MORNING AIR.—There is something in the morning air, that while it defies the penetration of our proud and shallow philosophy, adds brightness to the blood, freshness to life, and vigor to the whole frame:—the freshness of the lip, by the way, is, according to Dr. Marshal Hall, one of the surest marks of health. If ye would be well—therefore, if ye would have your heart dancing gladly, like the April breeze, and your blood flowing like an April brook—up with the lark—"the merry lark," as Shakspeare calls it, which is "the ploughman's clock" to warn him of the dawn; up and breakfast on the morning air—fresh with the odour of budding flowers and all the fragrance of the maiden spring; up from your nerve-destroying down-bed, and from the foul air pent within your close-drawn curtains, and with the sun, "walk o'er the dew of the far eastern hills." But we must defend the morning air from the aspersions of those who sit in their close airless studies and talk of the chilling dew and the unwholesome damps of the dawn. We have all the facts in our favour, that the fresh air of the morning is uniformly wholesome; and, having the facts, we pitch such shallow philosophy to fools who have nothing else for a foot-ball.

PERSECUTION OF SUPPOSED ENEMIES.—The attacks made by swallows and other small birds upon

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hawks, shrikes, polecats, and indeed on all animals of prey, must have met the observation of almost every person, all the weakest and most helpless birds in a neighbourhood uniting in a body to drive the invaders away. I have somewhere met with an account of a similar attack made upon a hunting spider by flies, though we must look upon this as quite anomalous, for amongst thousands of these spiders, whose proceedings I have watched, I never observed such an occurrence. But connected with such singular attacks of the weak upon the strong, a much more remarkable circumstance is frequently witnessed; for, passing over the cuckoo, who is persecuted by small birds, evidently because they mistake him for a hawk,* most night birds are attacked in the same way, whenever they make their appearance by day. We might, perhaps, refer this in the case of owls to the general principle, though owls seldom, I believe, prey upon birds, if they can procure mice and other small quadrupeds; but what are we to think of the night-jar (*Nyctichelidon Europæus*, RENNIE), which is subjected to similar persecution? This poor bird appears, indeed, to be the butt of innumerable mistakes in all quarters; for, though it feeds, like the bat, upon nocturnal moths and other night-flying insects,—the small birds show, by the attacks they make upon it, that they believe it to prey upon them. The name also, which it has received in all languages of *goat-sucker* (most absurdly continued by most recent naturalists in the term *Caprimulgus*), shows the opinion entertained of it by the vulgar. It is, however, as impossible for the night-jar to suck the teats of cattle,

* See *Insect Transformations*, page 78.

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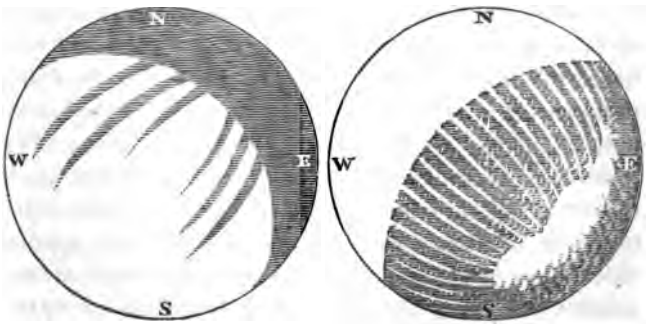
(though most birds are fond of milk*), as it is for cats to suck the breath from sleeping infants, of which they are absurdly accused, inasmuch as the structure of their organs would baffle any such attempt.

RADIATED CLOUDS.—Even when the sky is serene, it is not uncommon to see one or more clouds, usually white, light, in form of streaks, in arch-formed curves, and directed to some opposite point of the horizon. This sort of cloud is called a rayed or streak-cloud. The opposition may take place in two ways, either in the entire circle of the horizon, or in the half-circle. If the ray pass through the zenith, its extremities will necessarily stretch to points which are diametrically opposite in the entire circle. When there are several rays, they commonly converge in two opposite points in the entire circle of the horizon, and this group or system of rays is what I call a *meteorological radiation*. The point in which the rays become united together, whether real or supposed, may be called the *converging point*. It is real, if the rays are continuous; and supposed, if they are broken or interrupted. It is but seldom, however, that



* See Sweet's *British Warblers, passim.*

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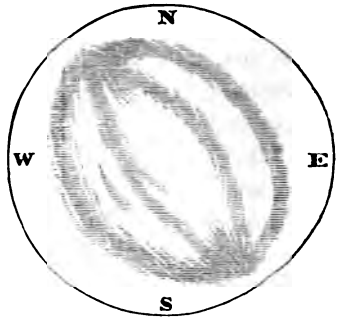
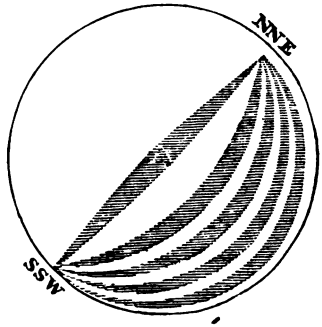
rays meet in one point. It more frequently happens, that they issue from a small mass which is of various shades of color, but generally grey or whitish; and this I have named the *focus* of radiation. In this mass the rays melt away, or are lost. The convergence of rays to a single focus is sufficient to constitute a radiation: but as it is the nature of rays to stretch towards two opposite foci, it is probable, that the convergence towards the second focus is prevented by circumstances, which do not render the phenomenon at all extraordinary. The radiation, consequently, will be only partial in one case, and entire in the other. If the rays be more apparent on one side than on the other, the radiation is unequal—and if the rays appear on one side only, it is then incomplete, or unilateral It is irregular when the rays are sinuous, or ill-disposed; — direct when the middle ray passes towards the zenith, while the lateral rays on each side have the same inclination in respect of the horizon. It is inclined or oblique, when the rays on one side are nearer to the horizon than the cor-





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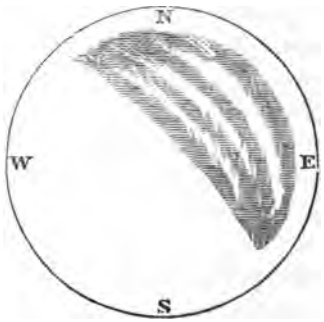
responding rays on the other side. I may remark, that sometimes, according to the degree of the obliquity, the two points of convergence are not directly opposite. Rays may be spread at unequal distances —and the separation, great or little, of the extreme rays may be denominated the amplitude of the radiation. The axis is a line which may be supposed to be drawn from one point of convergence to the other.



There are radiations, the rays of which are equal, or nearly alike. There are others, the rays of which are unequal, either in their dimensions, or in their consistency and color. For instance; on one side, they may be united, fine, light, or white; on the other side, thick, black, large, dappled: and sometimes, even the lower are in well defined streaks.

We have hitherto spoken of radiation, as if the two points of convergence were exactly in the horizon. But it is not always thus; for both are often above the horizon, and sometimes they are below, though it more frequently occurs, that radiation is disposed in such a manner that one of them is above, and the other below.

I have often observed, that when the axis of the radiation is drawn from one equinoctial point to another, the two points of convergence are in the horizon, or equally elevated above the horizon; and that when the

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axis is in the direction of north to south, or reciprocally, the focus or point of convergence on the north, is raised above the horizon, whilst that on the south is below. The disposition is rarely otherwise, and seems to favour the opinion of the ancients, that the winds blew downwards from the north, and upwards from the south. It is, however, unknown to me, whether that opinion was founded upon an exact observation of facts, or whether it was only a hypothetical consideration originating from the elevation of the pole in our northern climates. It is, at all events, certain, that, in general, the point of radiation is so much raised above the horizon as to correspond directly with due north; and if it be not placed in such a situation (which frequently happens) it is progressively lower in proportion as the focus approaches the east or the west.

Radiation is moreover a phenomenon so common, that few days pass without our having an opportunity of observing it. Radiations may be seen to succeed each other without interruption for some time. Nevertheless, there is no mention made of them in treatises of Meteorology. Mons. de Lamarck alone has, I think, in his Calender designated them by the name of *Barred Clouds*. But this illustrious author has paid but little attention to the characteristics of the phenomena. As for me, I attach so much importance to it, that I regard it as the key to almost all the appearances of the celestial vault. *

That this phenomenon did not attract earlier atten-

* See a paper on this subject, with figures, by J. Rennie, *Mag. Nat. Hist.* vol. i.

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tion, is much more astonishing, as it presents itself by night as well as by the day, under various and very beautiful forms. I could here produce from the writings of a great number of travellers ample testimony on this subject, and also in respect of the important appearance which, according to my conjectures on the Aurora Borealis, radiation makes in that brilliant meteor. "Aurora," says Mons. de Chateaubriand, in his Itinerary from Paris to Jerusalem—"rose on our right above the lands of the Continent, on our left stretched the sea of Marmora; the prow of our vessel was turned towards an island; the sky in the east was of a vivid red, which paled in proportion as the light increased. The scene changed—numerous red and green *rays, issuing from a common centre,* ascended from the east to the zenith; these colors vanished, re-appeared, vanished again, until the sun rising above the horizon, confounded all the colourings of heaven in one universal whiteness, lightly tinged with gold."

I will now give an example of the formation, and of the different periods of radiation.—I will select one of the most simple cases, that can be met with. On the 19th of June, 1809, at three o'clock in the morning, the sky was very beautiful. But soon afterwards, a light cloud, streaked and not much elevated above the horizon, was formed to the W.N.W. This cloud became larger, and assumed the shape of a very well delineated arc, which stretched from the west to the north-east. It was of an iron-grey colour. The sun rose in great splendour beneath it. In the first, N. W. S. E. represent the entire circle of the horizon, and the arc is projected on the

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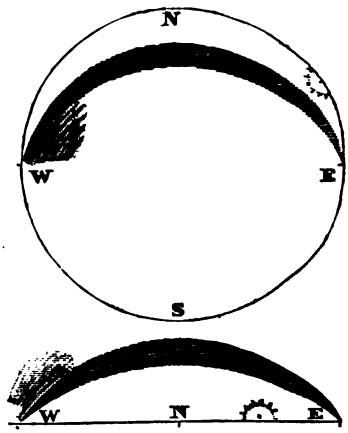
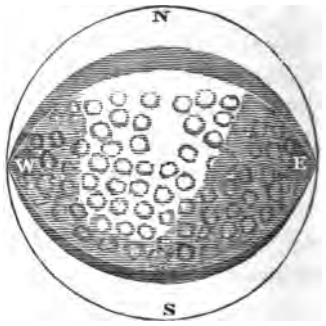
plane of that circle. The second represents the appearance of the northern part of the sky; W.N.E. is a part of the horizon. The sun gradually rose to the height of the arc, by which it was eclipsed for some moments. The western part of the sky became insensibly dappled over, and the arc changed to a more deep and sombre hue. The wind blew gently from the W.N.W. The dappled clouds were more dispersed, and progressively carried towards the region of the east, were formed into another mass. But, at the same time, the outline of another arc, similar to the former, was distinctly perceptible towards the south. The two small masses of dappled clouds uniting together occupied a space between the two arcs. It was now half-past five o'clock. The mass in the west had totally disappeared, while the east was become dappled all over. The arc, which extended to the south, was more developed. The wind from the W.N.W. blew more





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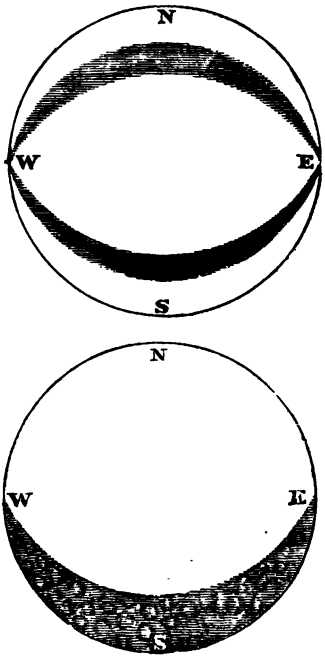
strongly. The eastern mass verging to the south-east dispersed. The two arcs only remained; that on the north dwindled away, while the other was enlarged. It was now half-past six o'clock. About seven, the northern ray had disappeared, and that on the south only remained, which, being of much greater width, extended over all the upper horizon, forming a segment, white and dappled.



The segment gradually diminished, and at half-past eight was no longer visible. The wind blew more strongly from the W.N.W. and N.W. The sky became clear, and continued so until noon.

This example shews the formation of a very simple radiation, composed of two arcs only. At first, it was incomplete or unilateral, and then complete and regular, with its two points of convergence in the horizon. It may be remarked, also, that as the streaked masses, which had constantly occupied the intermediate space between the two arcs, were dissipated, the radiation progressively dwindled away. I shall, therefore,

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call this a simple and perfect radiation, beginning in the west, and terminating in the east, and having both points of convergence in the horizon. Radiations, however, may take place in complicated forms, either with segments or tracks; and this consideration has led to the following divisions:—

COMPLEX RADIATIONS.—It must be remembered, that the convergence of rays into one focus constitutes a radiation; and, that, when there are two foci, which more commonly occurs, they must be in opposite parts of the sky, except only in the case of obliquity. When there are several co-existing radiations, it scarcely ever happens, that there is one of them complete. Generally speaking, they are all partial. Two complex radiations are only seldom observable—still more rarely three. In a double radiation, the rays may be thrown in different angles, which may occasion a sort of confusion in the appearance of the sky, to a person who is not familiarized with occurrences of this description. In other respects, this intersection of rays serves to distinguish a double radiation, from certain oblique radiations, whose rays are almost always continuous or in straight lines. In most cases the double radiation is contrary, that is to say, that their rays intersect each other at right angles.

Radiation with a segment.—Radiation co-exists with the segment in two principal ways. First, when the segment is used in the sense of a radiation. It frequently happens, that the rays and the segment are situate in opposite directions—or, rather there are two segments opposite to each other, with the rays in the intermediate space. And secondly, when the segment is used in a signification differing from a radiation. In

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this case, the focus of the radiation is sometimes placed above the segment, or rather the rays are interrupted, and the supposed point of convergence is in the segment itself, or in the horizon, or below the horizon. This state of the sky is susceptible of many varieties, according to the obscurity or clearness of the segment, and according to the nature of the rays.

Radiated streaks with the segment.

This state of the sky, which may offer a great number of varieties, in proportion as the segment is clear or obscure, and as the radiating tracks are contrary to the segment, or in the same construction with it, coincides with the preceeding. Of all celestial appearances, this spectacle, when unobserved by clouds, is magnificent in the extreme.

Radiation resting upon an opposite arc or streak.

We frequently observe radiations, the streaks of which hold the place of inferior rays, and we also see others which entirely rest upon an opposite streak, however elevated above the horizon.

Radiated streaks above an opposite arc.

Radiated streaks above an opposite streak.

The two last may be easily comprehended from the preceding observations.

These are the principal regular aspects of the sky. They may be considered as primitive types, by which others, equally worthy of attention, may be discovered, but which it would take up too much time to enumerate. Thus, streaks, rays, and segments, may be entire, continuous, interrupted, or united, white, dappled, fringed, &c.*

* M. Clos, *Nouv. Aperçu Meteor. Paris*, 1828.

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INDUSTRY OF ANTS.—Those who are not deep in the technical terms of entomology, may spend many an amusing hour in studying the habits of the more ingenious insects (if we may use the epithet). The various species of ants, for example, are now busily repairing the damages which the severities of winter have produced upon their domiciles. It is surprising to observe with what expedition they construct their streets and covert-ways. Upon removing a box in my garden, in which I had sown some early annuals, I found a large colony of the brown mason ants, which commonly shelter themselves under stones or amidst grass. The box being removed in the morning, they were left exposed to the light and heat of a bright sun, which is little less offensive to them than rain or frost. The colony was too large to make an immediate retreat to a place of shelter; which, besides, it would have required some time to discover and make known by their slow method of communicating intelligence. They had no alternative, therefore, but to enlarge the galleries which they had already constructed as part of their village under the box. Impelled by the strong stimulus of necessity, therefore, and being goaded by the sun's rays, they completed their excavations, and by noon had piled up a mass of earth, which at the same time increased their interior galleries and added to their protection above. At this time scarcely a straggler was to be seen, where, a short time before, hundreds were digging and piling, with all the impress of Virgil's Carthagenians, in the Second Æniad:

> Some extend the wall,
> Some build the citadel; the *formic* throng,
> Or dig, or push unwieldy *clods* along;

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Some for their *streets select* a spot of ground,
Which, first designed, with *ramparts* they surround;
Here some design a male, while others there
Lay deep foundations. *Dryden.*

FOSSIL CHARCOAL ACCOUNTED FOR.—I was particularly struck with a phenomenon recorded by Dr. Richardson, the naturalist in Captain Franklin's Expedition of Discovery, respecting the shale on the coasts of the Arctic sea. This shale composed precipitous banks, which, in many places, *were on fire.* "The shale," adds Dr. Richardson, "takes fire in consequence of its containing a considerable quantity of sulphur, in a state of such minute division, that it very readily attracts oxygen from the atmosphere, and inflames." Nothing, I think, could explain in a more satisfactory manner the occurrence of charcoal in coal measures, and other mineral strata. In the anthracite mines of North America, for example, wood-charcoal occurs with the ligneous structure as well marked as in charcoal recently prepared.

VOLCANOES.—It is remarkable, that in the Old Continent, the principal chains of mountains contain no volcanoes, and that islands and the extremities of peninsulas are alone the seats of these; while in the New World, the immense range which runs along the shore of the Pacific Ocean, possesses more volcanoes than are to be met with in the whole of the Old Continent and its adjacent islands.

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TO ——

'Tis the season of love, 'tis the spring of the year,
Lo! trees in their greenness, and beauty appear;
And wild-birds unnumbered, are tuning their throats
To greet the new season with love-labored notes;
And murmuring bees, where the flower-banks are sunny,
Ply their labors around, culling treasures of honey;
And fair is the morning, and mild is the even,
And soft are the zephyrs, and bright is the Heaven.
Earth and Heaven rejoice; and the sea's azure brow,
Unruffled by tempests,—smiles glowingly now.
In the midst of such pleasures, I languish for thee—
Thou art absent, and nothing is pleasing to me.
Oh! return—and my joys shall come with thee along,
Thou queen of my bosom, and theme of my song!
Each day shall pass by, like an exquisite dream,
With music of birds, and the whispering stream;
And murmuring bees, and the bright hues of Heaven,—
And beauty of morning, and mildness of even:
And our hearts shall confess, as together we rove,
'Tis the spring of the year, 'tis the season of love.

Ely. *E. Darby.*

THE GARDEN.

How lovely is a garden,
With all its perfumes, and its various hues;
The blushing rose, Clematis sweet, and fair
Narcissus of poetic tale, and all
The scented tribe; in number, far beyond
The art of man to tell, so endless is
The offspring at great nature's call. What can
Skill, and man's device, invent, so lovely,
And so fair?—Not Solomon in all his
Sheen, was deck'd like one—the least of these:
And wondrous is the change in these fair forms,
Inspring, in summer—autumn, and in death—

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How like the course of man's eventual round,
Of youth, of manhood; feebleness, and age:
And as the sweet and beauteous race will rise
From cheerless winter's cold and torpid state,
To meet the glories of the vernal sun,
So from the gloomy grave, with man spring forth,
To see the more resplendent Light of Christ—
The Saviour—Intercessor—God.

Rev. W. Munsey.

A Six Inside.

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MAY.

MAY, SWEET MAY!

Fresh flowers are on the green sward, young blossoms on the bough,
The brook, its tranquil orisons to Heaven is murmuring now;
The song of birds—the summer song—gives life to every spray,
Both glade and grove are full of love and—May! sweet May!

Stern winter's moody company of clouds hath fled the sky,
Sole monarch of an azure world, the Sun is riding high;
With balmy incense teeming, Earth salutes the welcome ray,
Above, around, the joys abound of May—sweet May!

While thus I tread the mountain track, or pleasant fields among,
I feel my heart bound high again, my spirit blithe and young;
I quite forget the shade that Time hath flung around my way,
Such soothing bliss is in the kiss of May—sweet May!

And so 'twill be, when chill'd by death, this heart shall beat no more,
When joys that charm'd, and ills that pain'd, shall all alike be o'er;
When lowly laid, this fevered breast shall shrink to dust away,
Nor wake again a gladsome strain to May—sweet May!

As freely yon majestic Sun shall laugh above my grave,
As greenly o'er my narrow house th' untrodden grass shall wave;
And flow'rs may spring from my cold turf as beautiful and gay
As on thy brow they're glowing now, O May!—dear May!

Wm. Kennedy.

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MORNING PLEASURES.—Whoever is found in bed after six o'clock, from May-day till Michaelmas, cannot, in any conscience, expect to be free from some ailment or other, dependent on relaxed nerves, stuffed lungs, disordered bile, or impaired digestion. Nothing can be done—absolutely nothing—if you do not rise early—except drugging you with draughts—a *luxury* which the indolent morning-sleeper must prepare himself to purchase dearly. We give him joy of his choice—bid him good-bye, and springing out into the sunny air, we gather health from every breeze, and become young again among the glittering May-dew and the laughing May-flowers. "What a luxury do the sons of sloth lose!" says Harvey, in his flowery Reflections on a Flower Garden, "little, ah! little is the sluggard sensible how great a pleasure he foregoes for the poorest of all animal gratifications." Be persuaded; make an effort to shake off the pernicious habit. "Go forth," as King Solomon says, "to the fields—lodge in the villages,—*get up early* to the vineyards"—mark the budding flowers—listen to the joyous birds—in a word, cultivate morning pleasures, and health and vigour will most certainly follow.

ARCHED CLOUDS.—The names which have been given to different species of clouds by Mr. Luke Howard, are now pretty generally known and adopted in meteorological journals; but though the author (naturally enough, no doubt,) deprecates the attempts which have been made to substitute English terms for his Latin ones; there can be little question that his learned nomenclature has retarded the popularity of the science. If this be the fact, as it indeed appears to be, it will be preferable

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to adopt such English terms as may be more intelligible to the general reader.

The species of cloud, therefore, which is called CIRRUS by Mr. Howard, may be conveniently termed the *wane-cloud*, being the thinnest, lightest, and highest of all the clouds, as if the accumulated vapour, which composes the lower and denser clouds, had *waned* away by its distance and elevation. The different forms which the wane-cloud assumes in consequence of atmospheric changes, may be equally designated by English as by Latin terms. The modification which we shall notice at present is called, by the peasants in Kent, *wind-reels*, from the notion that the streaks lie in the direction of the wind. That the current of the wind may have some influence in the arrangement of those streaks of wane-cloud is not improbable; but that some portions of the cloud are not influenced by the wind is proved by the streaks which may often be observed to cross the main lines at various angles,—in some instances, indeed, so regularly as to make a part of the sky look like net-work.

A very beautiful instance of the wind-reel fell under our observation on the 20th of May. The wind was N.W. light warm, and there had been a succession of dry weather for many days,—a circumstance which is popularly supposed to influence the formation of such clouds;—with some justice, perhaps, as they seem to be frequently the forerunners of rain—the first nucleus, as it were, of the gathering rain-cloud. One of the streaks spanned the entire visible horizon from N. W. to S. E. in an uninterrupted and nearly uniform arch, about the usual dimensions of a rainbow, though not so well defined. This arched cloud was accompanied by

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others conterminous with it, and nearly parallel with respect to the direction of their component streaks. These appeared to verge to a point,—but might be a common optical deception, depending on the laws of perspective,—at least, this is the received opinion of meteorologists respecting arched clouds. We are disposed, however, to think that the phenomenon cannot be always referred to optical deception; for we have more than once observed arched clouds, in various positions and directions with regard to the eye, which they could not have appeared in according to this supposition.

We continued to observe and admire those arched lines of cloud for several hours, namely, from noon till between four and five in the evening, and what was remarkable, though there was a light, but steady, breeze of wind in the direction of the arched lines, the form of the cloud remained nearly stationary and uniform in its outline. Now, are we to infer from this that a thin light stream of vapour spread over the whole extent of the horizon, and acted upon for four or five hours by a breeze of wind, would neither be evaporated nor moved from its position? The affirmative would be the natural inference; but Professor Daniell, in his excellent Essays on Meteorology, has endeavoured to account for the apparent stationary phenomena of clouds in so very ingenious and satisfactory a manner, that we hesitate not to adopt his explanation.

"The apparent permanency," says Mr. Daniell, "and stationary aspect of a cloud is often an optical deception, arising from the solution of moisture on one side of a given point, as it is precipitated on the other. No phe-

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nomenon is more common amongst mountains, or upon hills by the sea-side than clouds upon the summits which appear to be perfectly immoveable, although a strong wind is blowing upon them at the time. That this should be the real state of the case, is clearly impossible, as so attenuated a body as constitutes the substances of the clouds, must obey the impulse of the air. The real fact is, that the vapour which is wafted by the wind is precipitated by the cold contact of the mountain, and is urged forward on its course till borne beyond the influence which caused its condensation, it is again exhaled, and disappears. A slight inspection and consideration of the phenomena will be sufficient to convince any one of the correctness of this explanation. Reasoning from analogy, we may conclude, that the process which thus proceeds, under our eyes, upon the summits of the hills, likewise takes place on either side of the planes of precipitation in the heights of the atmosphere:—the vapour is continually condensed,—as continually re-dissolved in the act of precipitation, and the cloud appears to be unchanged and stationary."—p. 124.

According to the electro-chemical theory of the formation of clouds, however, it would be affirmed that the cloud was really stationary and unchanged, in consequence of the equilibrium of the electrical influence produced by the primary developement of the cloud, from the union of the constituent principles of water previously existing in the gaseous state. It is barely possible to apply the ingenious reasoning of Mr. Daniell to this theory, and to suppose that, while the mist or vapour constituting the cloud is forming upon one side, the water is simultaneously decomposed on the other side.

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We are still too much in the dark with respect to the principles that regulate atmospherical phenomena, to decide upon the precise effects of electricity; but supposing the theory alluded to has some foundation in nature, we may be tempted to proceed a step further, and connect it with the nearly allied influence of magnetism. Indeed, without some such power acting upon the light and moveable streaks, and tufts of vapour, which form what we call wane-clouds, (*cirrus*, HOWARD). We cannot devise any satisfactory explanation of the appearances which may so frequently be observed; for if the wind were the sole agent in determining their forms and positions, they ought always to stream in the direction of its current, as we see is uniformly the case in the analagous instance of smoke. In the case of wane-clouds, however, they as frequently appear to cross or lie obliquely to the current of the wind which blows in the plane of their stratification as the contrary; and sometimes they may be seen in positions simultaneously so dissimilar, that it seems difficult to refer the direction of any particular tuft or streak to any known agent. As an instance of this, a few days after the occurrence of the preceding arched wane-cloud, we observed a wane-cloud with the wind, which was easterly, in the general direction of the streaks, but shorter crossing streaks occurred almost at right angles to the current of the wind, while there were long streams extending over half the visible horizon, divaricating very considerably from the parallelism of the line which marked the direction of the wind. Might it not be, that some at least, if not all, of the lines of cloud were in a position corresponding with the what mathematicians call the

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resultant of two forces; which in this case, we assume to be the current of the wind, and terrestrial magnetism? So far at least, we are certain, that those long lines of wane-clouds very frequently lie in directions corresponding or nearly corresponding with the magnetic meridian; and if magnetism has no influence over them the coincidence must be confessed to be singular and unaccountable.

It would be wrong, however, to venture upon any positive assertion of this theory or rather speculation, in the deficiency of well ascertained facts; but from the analagous arrangement between the wane-clouds figured above, and the streaks of the Aurora Borealis, which is also supposed to be connected with magnetism or electricity, we think, that farther investigation may elucidate the dependance of the phenomenon on the same causes. The Aurora Borealis indeed, is almost always in the direction of the magnetic meridian, while the wane-clouds in question, so far as we have remarked, are more under the influence of the current of wind blowing in the plane of their stratification.*

CAT WHICH CAUGHT SWALLOWS ON THE WING. —We have frequently remarked the surprising rapidity with which beasts of prey pounce upon their victims, but the most striking instance which we recollect of, this was that of a cat, who caught swallows on the wing. It was in the spring, when insects, in consequence of the cold, fly low, and of course the swallows are forced to hawk for their prey by skimming the surface of the ground. The wily cat, taking advantage of this, stretches herself upon a sunny grass plat, with her legs extended

* J. Rennie, in *Mag. Nat. Hist.* vol. i.

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as if she were dead; the flies collect about her, as flies always do when they can find any animal as patient as my uncle Toby to endure their buzzing and tickling. The simple swallows, dreaming of no harm, and thinking they can here make a good meal,—dip down from the barren air,—dart with open bill upon the flies; when puss, perceiving her prey within reach, makes a spring like a flash of lightning, and strikes down with her paw the poor thoughtless swallow. The best marksmen know how difficult it is to shoot a swallow on the wing; but the cat found her patience, cunning, and rapidity well rewarded by her unerring success whenever a swallow ventured within her reach.

DIFFUSION OF SEEDS.—The economy of Providence in distributing seeds, may now be remarked in those of the Dandelion (*Leontodon taraxacum*) which are every where to be seen floating about on the air, supported by their feathery down. It is not to be supposed, that half of these ever fall upon spots favourable to germination; but when so great a number of them, and of their congeners of the class Syngenesia, are scattered about by the winds, it almost raises the chance to certainty, that some of them will fall in spots where before there has been none, or only a scanty vegetation: on the tops of walls, for instance, where a thin stratum of soil has been formed by the decay of the winter crop of mosses. The process of the formation of such soil, is exceedingly interesting, and may be observed on a small scale even in cities, on brick or stone walls. First, there is the green incrustation called *byssus*, by Linnæus, but recently proved to be the primary germination of several species of mosses, such as *polytricha* and *tortulæ*. When this

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decays, a very thin layer of vegetable earth is formed, which affords a scanty support for the roots of the next year's crop of mosses; and in process of time, soil is formed of sufficient depth for *Draba verna*, and other wall plants. A singular contrivance is conspicuous in one of our wild cresses (*Cardamine impatiens*), as well as in the balsums, and in touch-me-not (*Impatiens Noli-me-tangere*)—a native plant of the same genus. In all of these, when the seed is ripe, the valves which enclose it are so constructed, that by the influence of the sun's heat, they open with a sudden jerk, and throw the seeds to a considerable distance. The same effect is produced sooner, and with more force, when the ripe seed vessel is touched by the hand, or by any accidental waving of the leaves against it. Were we disposed to refine upon the final cause of this,—(a subject very ready to mislead), we might say, that this jerking of the seeds was contrived not only for their diffusion, but for their preservation from birds and insects,—since the instant that these should begin to devour them, the springs of the valves would be thrown into action, and the seeds scattered about before a single one could be secured for a meal. In the wood-sorrel, (*Oxalis acetosella*) as well as in the horned-sorrel (*O. corniculata*) the structure of these valves is very beautiful, but no description could do justice to it, not even with the aid of figures. The first, however, abounds in most woods, and the latter where it has been introduced as a flower, soon becomes, from the circumstance under consideration, a very troublesome weed.

One of the most beautiful contrivances for the diffusion of seeds occurs in various species of violets. "The

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seeds of this order of plants are contained in a capsule of a single loculament, consisting, however, of three valves. To the inner-part of each of these valves the seeds are attached, and remain so for some time after the valves, in the process of ripening, have separated and stood open. The influence of the sun's heat, however, causes the sides of each valve to shrink and collapse, and in this state, the edges press firmly upon the seed, which, from being before apparently irregular in its arrangement, comes into a straight line. The seeds, it may be remarked, are not only extremely smooth, polished, and shining, but regularly egg-shaped; so that, when pressed upon the collapsing edges of the valve, it slides gradually down the sloping part of the seed, and throws it with a jerk to a considerable distance. There is another part in the contrivance of Providence, for the same purpose, in the violaceæ, worthy of remark. Before the seed is ripe, the capsule hangs in a drooping position, with the persisting calyx spread over it like an umbrella, to guard it from the rain and dews, which would retard the process of ripening: but no sooner is the ripening completed, than the capsule becomes upright with the calyx for a support. This upright position appears to be intended by Providence to give more effect to the valvular mechanism for scattering the seeds, as it thus gains a higher elevation (in some cases more than an inch) from which to project them; and this will give it, acccording to the laws of projectiles, a very considerable increase of horizontal extent.

"Some ripe capsules of a fine variety of *Viola tricolor*, which I placed in a shallow pasteboard-box, in a drawer, were found to have projected their seeds to the distance

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of nearly two feet. From the elevation of a capsule, therefore, at the top of a tall plant, I should think these seeds might be projected twice or thrice that distance."*

MIGRATION OF EELS.—The migration of fish, which occurs at particular seasons, according to difference of species, may, during the present month, be remarked in the case of eels in streams where they abound; but as it usually takes place in the night, it seldom attracts attention. In cloudy weather, however, they often continue to *run*, as it is termed, during the morning. We once, and only once, remarked this, about ten years ago, on the 13th of May. The river Clyde was embrowned at the time in consequence of a recent fall of rain, which may have partly induced them to continue running after sunrise. Their line of march, if we may call it so, was about a foot or more from the edge of the bank, with which they kept nearly parallel, and their column might be about six inches broad. The eels themselves were all of one size, about as thick as a crow-quill, and about three inches long. They kept so closely together, that there might be, we should suppose, some hundreds in a foot's length of the column. What was no less singular, the column itself appeared in its whole extent to be of uniform breadth, as if it had been regulated by the parallel lines of a mathematician. The length of this column we had no means of ascertaining, but it must have been considerable, as we traced it for more than half a mile; and during several hours which we observed it, the run continued undiminished, and proceeded at a velocity, as nearly as we could estimate by the eye, of half

* J. Rennie, in *Mag. Nat. Hist.* i. 380.

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a mile or more in the hour. The whole column must have consisted of countless millions of eels.

SAP OF THE ROSE TREE.—From a plant of Rosa rubiflora at Hammersmith, with a stem 3½ feet high, and 2¼ inches in diameter, when deprived of its branches, and the head sawed off, 29th July, 31 ounces of sap flowed in about a week, which, together with loss by evaporation, probably exceeded three pints. Chemical analysis gave the following ingredients:—

	Grains.
Oxalate of lime, . .	2.9
Acetate of lime, . .	1.097
Acetate of potass, . .	0.7
Gum and extractive, .	2.1
Sugar? soluble in alcohol, .	0.1
Loss, . . .	0.353
	7.25

R. Adams, in Brande's Journal.

With respect to what Mr. Adams chooses to call extractive, I may be permitted to remark, that the term ought to be exploded altogether from vegetable chemistry, since it does not, like the terms gum, acid, or alkali, convey any distinct meaning, nor apply to a definite class of substances. The recent brilliant discoveries in vegetable chemistry, ought to put an end to this vague phraseology.

POPULAR ERRORS RESPECTING BLIGHT.—The popular creed current among gardeners and farmers, and often met with in conversation, as well as in books, is, that the east wind, foggy weather, and other states of the air, produce, what is called blight, which means any thing that injures vegetation, but is particularly applied

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to destructive insects, and the parasite funguses, called by botanists, *Entophytæ Hypodermia*. Now, it has been proved by observation and experiment, that all insects are regularly hatched from the eggs of parent insects, which are glued to plants or their roots the previous season, (as was shewn by specimens) and consequently cannot be spread about, nor increased by winds or fogs. It would be as correct to say, that a flock of geese was produced and spread about by blighting weather. The funguses called smut, and rust on corn, are in the same way produced from the seeds of former smut and rust, which being light, are spread about by the wind, but can no more be produced by it, than the corn itself. It is highly important, that the true causes of these evils should be known in order, that remedies for them may be devised, rather than passively accusing the weather, which cannot be controlled, if it were, as it cannot be, the cause of such blights.*

FLOWERS.

BY H. C. DEAKIN, AUTHOR OF "PORTRAITS OF THE DEAD," "THE DELIVERANCE OF SWITZERLAND," &c.

Baptized by dew and rainbow showers,
And sun'd by all the summer hours,
How sweetly bloom ye gentle flowers?

E're the young world was in its prime—
Unsoiled by sin, undim'd by crime.
Ye delicate creatures laughed at time!

Ye blushed in Paradisal glades;
Hung o'er her founts in glittering braids—
Perfumed the breezes, and the shades;

* J. Rennie's *Opening Lecture at King's College.*

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And when the twilight's silvery flame,
Besprent with star-beams, o'er ye came,
Ye put the ethereal lights to shame.

But now ye are not what ye were,
Tho' lovely still, and rich and rare,
And of the things of earth most fair:

And when your urns are flowing bright,
With May-dew, and May-morning light,
Spirits of spring! we're ravished quite.

Our hearts, when looking on ye sigh,
With prelibations pure and high,
And ostents from a far-off sky!

So lovely, gentle, and so pure,
O'er man's soul holding such sweet lure,
Your fragrance should for aye endure.

But ye must wither and decay—
And fade like cherished things away;
Frail emblems of hope's parting day.

A little while ye scent the skies,
Then perish 'midst delicious sighs;
So beauty blushes, blooms, and dies!

But oh! ye gems of sun and flowers,
Ye censers of the summer hours;
I love ye all, my mournful flowers.

Abbey Cottage, near Leek, Staffordshire.

THE WANDERER'S RECALL.

BY G. R. CARTER, ESQ.

O'er the far blue mountains,
O'er the white sea-foam,
Come, thou long-parted one!
Back to thy home!
Hemans.

The flow'rs their balm are breathing
Like incense from an urn,
And the rich winds with them wreathing,—
Why wilt thou not return?

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There's the music of sweet voices
Beneath thy favorite tree,
And each merry child rejoices
When we speak to him of thee.

The sapphire streams are falling
On the verdant sunny ground,
Thy absent steps recalling
With glad and cheerful sound.

And Spring has waked the roses
With smiles from azure skies,
And many a flow'r uncloses
Its bosom to thine eyes.

We have oft invoked thy coming,
Thy familiar voice to greet,
When the festal bee rose humming
O'er the violets at our feet.

Thou wert the star which guided
Peace and beauty to our hearth,
But our home is now divided
From thy chaste and lively mirth.

Oh! come—the birds are singing
Their joyful hymn around,
And the fragrant winds are bringing
The echo of its sound.

Thou shalt watch the sky assuming
Its purple flush at even,
When golden fields seem blooming
Amid the sunny heaven.

Are not thy feelings haunted,
With the land thou hast resigned?
Cling the lovely and enchanted
Like tendrils to thy mind?

Oh! return—each minstrel-comer—
Fills the air with vocal glee,
And the flow'rs embalm'd by summer,
Are harbingers of thee!

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JUNE.

THE WIND.

The wind on the waters! 'tis lovely to me,
I, mark how it ripples, both river and sea,
When the bright sun of summer is setting at eve,
And his beams a deep glow on the clear ocean leave—
When it lies all outstretched, like a motionless lake
In the wind, with a murmur that scarcely would break
The rest of an infant—steals down on the deep,
And kisses, and lulls it to tremulous sleep.

And the wind in the leaves—oh! I love when the day
Of summer is sultrily stealing away,
To see the soft quivering come over the leaves,
And the boughs rise and fall, as the deep ocean heaves;
And I love in the winter to hear the low thrill—
Steal on thro' the gloomy pine boughs on the hill;
And hear the wild moan that comes softly at first,
And to think of how grandly the tempest will burst.

And the wind in the heavens! in the summer midnight,
When it puts the thin clouds to a hurrying flight;
And when in the depths of the soft radiant blue,
The moon and the stars seem as if they fled too,—
And at noontide, to see the dark storm coming on,
When the silent wind hath not a breath or a tone,
Yet still on its heavy wings—beareth the thunder—
Oh! this to the heart, is a rupture and wonder!

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The wind on the flowers,—who hath not been stayed
At twilight within some dim sheltering glade,
To search for the blossoms that gave the rich scent;
That into the heart of the wonderer went,
Like the freshness of spring o'er a withering tree—
Like the softness of starlight upon the wild sea?
And who would forget in that moment of pleasure—
The wind was the messenger bearing the treasure?

Sweet wind—over ocean and clouds—tree and flower,
'Tis thine to exert a strong influence and power,
And thou, who in nature's wide range hath a part,
Oh! shalt thou not have too a space in the heart?
Thou hast! there is One who can speak in the breeze,
And whether thou comest o'er sky, grove, or seas:
We feel that His power o'er us too can be,
We know that His spirit is breathing in thee.

M. A. Browne.

EVENING AIR.—It is very well for a poet whose fancy soars too high above the things of earth, not to think of his own health—it is very well, we say, for him to wish to

Sit, and nightly spell
Of every star the sky doth shew,
And every herb that sips the dew;*

or to wander romantically about the woodlands at midnight, like Coleridge, to listen to the summer music

Of a hidden brook
In the leafy month of June,
That to the sleeping words all night,
Singeth a quick time;†

but this, though it be poetical and romantic, is most certain to injure the health, and sow the seeds of disease, and perhaps of death, and therefore, we pronounce it to

* Milton's *Il Penseroso.* † *Ancient Mariner.*

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be foolish and crazy. It may be recollected, that Thomson the poet of the Seasons, fell a sacrifice to such night exposure, and hundreds more, who delight in evening walks, and evening parties, have paid a heavy penalty for their pleasure, in form of inflammations, and summer coughs, which have ended in hopeless autumnal consumption.

STREAK-WANE-CLOUDS INDICATING RAIN.—During the last summer, as well as in former seasons, we have very frequently remarked, that when the sky was beautifully streaked with the wane-clouds, variously denominated marestail and wind-reels, (*Cirrostratus*, HOWARD)—that rain almost to a certainty followed within twelve hours; and hence, when the firmament is most pleasing to the eye, and gives token to the inexperienced of continued fine weather, storms are, in the meanwhile gradually brewing to belie the appearance. It reminds us of Æsop's shepherd, who was tempted to become a sailor by the temporary, but treacherous, tranquillity of the sea. In the same way, we have been frequently tempted into a rather distant excursion, by these beautiful wane-clouds, till repeated experience taught us, as it did Solomon, that "beauty is vain," and that they only

"Lur'd to betray, and dazzled to blind."

Parnell.

NEST OF THE PEAHEN.—Like most gallinaceous birds, the peahen makes little provision for the warmth of the eggs during the process of hatching; but in one which we lately examined, two circumstances struck us as well worth recording. Though the eggs were placed on the bare earth, without a blade of grass under them,

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the mother-bird had taken care to select a very sheltered spot, the nest being overhung with a low branch of a spruce fir which was suspended over it like an umbrella, and completely protected it from rain and dew, circumstances of great importance to her comfort during the process of hatching. The other circumstance alluded to was still more remarkable. It is a well known fact that female birds, for the most part, wear off a considerable portion of the feathers from their breasts by their frequent movements in turning the eggs, that they may receive an equal exposure to the heat of her body. Now, as her eggs were placed on the bare earth, no grass growing under the drip of the spruce branch, the breast of our pea-hen must soon have been rubbed bare of feathers. Foreseeing this event, as it would appear, the careful creature prepared a soft cushion of dry grass, upon which her breast might rest. This cushion was placed on the most exposed side of the nest, but no part of it was laid under the eggs themselves. Its position corroborates the statement made by some naturalists, that birds, while hatching, always sit with their heads exposed to the current wind.*

HABITS OF THE WHEATEAR.—One most probable reason for the solitary habits of the wheatear (*see T. T. for* 1831), is the nature of its food; for living, as it seems to do, on the few insects which frequent such places as the little heaps of stones collected from the ridges of a corn-field, it would be impossible for more than a pair of these birds to find subsistence near one spot. The gregarious habits again of other birds which

* *Architecture of Birds.*

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feed on insects, depend upon similar habits in the peculiar insects to which they are partial. The rook (*Corvus predatorius*, RENNIE), for example, is very fond of the grubs of the cock-chafer (*Melalontha vulgaris*), which (if not strictly gregarious) are usually so crowded in particular fields that I have seen in Normandy some bushels of them collected by women and children, hired for that purpose, to follow the plough. The wheatear is therefore not alone in its solitary habits, the same being common to all its congeners.

MIGRATIONS OF THE LAND-RAIL.—The land-rail (*Ortygometra Crex*, RAY), affects, in its summer migrations, more northern localities than the south of England. Those mentioned by White, therefore, seem to have been birds on their passage, in the same way as Belon tells us it is found in Candia on its passage to Greece. I have never met with it in England, though in Scotland every grass and corn-field resounds in the evenings and mornings of the early summer with its peculiar cry of *crex, crex*, much like the noise made by stripping forcibly the teeth of a large comb under the fingers. Willughby and Ray mention it as being abundant in Ireland; yet I never heard it in the vicinity of Cork. Dr. Turner says he never met with it in England except in Northumberland. Forster, however, says, in his "Circle of the Seasons," that he has known it build for years past in the clover behind Hartwell Farm, near Chartness. This bird is extremely common in the southern parts of the county of Durham; its harsh cry, in a June evening, may be heard in almost every meadow.

ELECTRICITY OF THE WINDS.—In the Mediterranean, Mr. Black ascertained, by numerous observations, that winds or currents of vapour, of some continuance,

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from an extent of sea, are *negatively* charged with electricity; while those from the land, especially from hilly countries, are relatively in a positive condition. When opposite winds, such as N. and S., are differently charged with electricity, and meet, a transfer of the electric matter is always the consequence.—*Journal in the Mediterranean.*

WORMS IN SPRING WATER.—The common opinion among medical men, that the worms, found in the human stomach and intestines, are introduced by drinking water containing such worms; and the vulgar opinion, that they are introduced by eating fruit, are both easily refuted by the simple experiment of exposing the worms found in water or in fruits, to a heat equal to that of the human bowels, namely, 98° Fahr., when it will be found, (as was shewn by experiment) that such worms will instantly die. The knowledge of this simple experiment may often prevent unfounded alarms, such as when a family are induced to abandon a country-house, from their physician finding small worms in the spring water of their well, and which he erroneously concludes to be ascarides.*

THE SONG OF THE ROSE.

BY MISS M. L. BEEVOR.

In gardens terrestrial, I blossom and grow,
But my birth it is not of those regions below;
No! I come from a purer and happier clime,
Where the flowerets bloom on through endless time!

Where the shadow of changing—the thought of decay,
Comes never to darken those regions of day;
Where my soft leaves are fann'd by ambrosial gales,
And my perfume the celestial seraph inhales:

* J. Rennie's *Opening Lecture at King's College.*

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Where the streams that roll round me, so stainlessly bright,
Are dim, by the lustre-clad children of light;
Where ever laughs o'er me, one blue, changeless sky:
—From the realms of bright beauty and pure bliss am *I!*

O Man! when the sons of Heaven smil'd on thy birth,
I was sent for awhile to bloom with thee on earth
And thou, when thou joy'st in mine odour, should'st know,
We neither were fram'd to *continue* below!

But marvel not, Man! that I fade when I see
Thy follies, dark guilt, and deep, deep, misery;
Oh! the storms that beat on me destroy not my frame
So much as thy slights of the land whence I came:

That land where I'm thornless, yet dwell in its bowers,
The least, as on earth, I'm the lady of flowers;
The land in which thou too art destin'd to grow,
Though blindly thou cleavest to darkness and woe!

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JULY.

It is a glore to see
The stabl'd winds and the calmed sea,
The soft season, the firmament serene.
The lown illuminate air and firth amœne,
The cornys croppys and the bloomed weeds
With gladsome garment revesting the meads.
Gawin Douglas.

THE DOG-DAYS.—We are never satisfied. Contentment is not the lot of our poor humanity. In winter, we complain of cold; in spring, we complain of rain; in summer, "when all the birds are faint with the hot sun, and hide in trees," we fail not to complain of the parching heat and the sultry air. Shall we say, then, that man is a complaining animal? With respect to the oppressive sultriness of the dog-days, we beg pardon of the laurelled shade of Shakspeare, when we hint the possibility of "holding fire in the hand by thinking on the frosty Caucacus";—for we think it both possible and practicable to cool, in some degree at least, the sultry air and the summer sun, by the aid of Fancy and of her pretty sister—Association. So thought King Solomon—so thought the younger Pliny, and so think we. The whistle of the mountain breeze, indeed, is not to be

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commanded, and must be given up; but refreshing fancies and cooling associations may be produced by the gush of fountains, the sound of running waters, or the bye-play of a jet d'eau. Such was Solomon's "fountain of gardens—his well of living waters, and streams from Lebanon." The Orientals know much better than we the utility of those delicious accessaries to summer comfort and elysian luxury. We feel cooler from the associations arising out of the mere description of an eastern fountain:

> 'Twas sweet of yore to see it play,
> And chase the sultriness of day;
> As springing high the silver dew
> In whirls fantastically flew,
> And flung luxurious coolness round
> The air,—and verdure o'er the ground.
>
> *Giaour.*

STORMS.—It is beautifully said, in the book of Job, that the "treasures of hail" and "snow" are "reserved against the day of trouble—against the day of battle and war," when the Lord "scattereth the east wind on the earth." Storms, indeed, are the artillery of heaven—the "Telorum armamentaria cœli," as Juvenal calls them,—designed by an all-wise Providence to wage incessant war upon stagnant air and pestilential vapours—to sweep from the wide desert accumulations of burning air—to purify, by agitation, the waters of "the great deep"—and to adjust the electrical balance between the globe itself and the expanded firmament in which it is embosomed. Were it not for the wind, indeed, which, in the words of Job, "passeth and cleanseth them," we should have the "bright clouds" themselves pouring

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down upon us pestilential rains, and the sweet breath of heaven infected with deleterious vapours. The mechanism of storms, (if we may use the expression) so far as electricity is concerned, may be thus explained.

Each particle of rising vapour, as it leaves the earth's surface, combines with caloric, and partakes of the electricity of the common reservoir—the earth. It remains in the air in so very minute mixture as not to disturb the transparency of dry air, till it rise into the colder regions, where it is condensed into vesicular vaporous clouds, the *Cirri* of Howard, but which are better termed wane-clouds. When these clouds increase, their capacity for electricity increases also; but not receiving a fresh supply from the earth, and little from the atmosphere, the resistance of the stratum of air between the cloud and the earth is overcome, and a violent discharge takes place *upwards* from the earth, producing one of those local thunder-storms so prevalent during summer.

In a picturesque point of view, the aspect of storms has been the theme of some of our sublimest descriptive poetry; and sometimes, when our fancy has been highly excited, we have formed the wild wish to be wrapt in the voiceless winds—dash along from mountain to mountain, and from cloud to cloud—to companion us with the spirit of the storm—let our fancy go with the blast, and revel among the clouds. It must have been in some such mood, upon viewing a night-storm, that the following lines were composed; and such a storm we have witnessed—so grand! so sublime! so darkly beautiful! —the very music of magnificent sound!—the very poetry of resistless motion!—

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The midnight winds are forth with high career,
Urging their cloudy chariots rapidly,
As if they rush'd to war, or fled in fear
Along the champain azure of the sky!
The heav'ns are all in motion; and the eye
Beholds the wonted visions of its search—
Moon, stars and clouds—all hurrying rapidly
Away, as if upon their final march;
As if th' arch-angel's trump had peal'd along that arch.

So, when the head of mighty Seraphim
This pictur'd volume from our eyes shall roll,
Unfolding to all eyes the face of HIM
Who sits enthron'd behind it: O! my soul,
How wilt thou shrink to see, in funeral stole,
Nature distracted in convulsions lie
On flaming pyre; and, at his destin'd goal
TIME, worn and weary, lay him down to die
On the paternal breast of hoar ETERNITY!

Rev. J. G. Crosbie.

PECULIAR HABITS OF THE HOP-FLY.—Towards the beginning of the preceding month, or earlier, the first appearance of the hop-fly *(Aphis Humuli)*, may be observed, but it is not till the present month that its numbers usually attract attention. It may be remarked, that the flies almost uniformly keep on the underside of a leaf—always preferring those which are youngest and healthiest, the older leaves become too hard to be penetrated by their sucker *(haustellum)*. In their young state, when just hatched, they are so small and so like the colour of the leaf, that they will readily escape the notice of those who are not acquainted with their habits. Dr. Good describes "myriads of little dots"* as the eggs of the hop-fly, but close inspection will convince

* *Study of Medicine*, 3rd Ed. I. 339.

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any one that these little dots are nothing more than the first cast skins of the newly-hatched flies; for none of these will be found on the under surface of the leaves—all lying on the upper surface along with the honey-dew or saccharine *ejecta* of the flies inhabiting the under surface of the leaf above. These positions of the flies, the cast skins, and the honey-dew are so uniform that we have never observed them in any other, in the innumerable cases which we have examined. That the small cast skins of the aphides have been mistaken for eggs is not wonderful when we consider their white color, but the distinct outline of the feet and other members will, at once, determine the fact.

SINGING OF BIRDS DURING A THUNDER STORM.—Chancing to be abroad in a violent thunder-storm, which burst over the metropolis and its vicinity last summer, we remarked a circumstance that had not before attracted our notice, and that has not, so far as we are aware, been hitherto recorded. The missel-thrush (*Turdus viscivorus*), is popularly named the storm-cock, because he is supposed to sing most and loudest previous to the onset of a storm, but we had not heard it said that he sings during the continuance of the storm. In the instance in question, a missel-thrush was perched upon a lofty elm hard by an ivied pollard, under which we had taken rather precarious shelter from the heavy thunder shower, and he continued to pour forth his loud shrill notes with scarcely a pause, though we do not recollect of ever witnessing thunder so near and so tremendous. One peal followed the flash of lightning in less than half a minute, and the very air seemed rending asunder; but the little songster, quite undismayed, gave

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no intermission to his music, if music it can be called, which resembles, as nearly as we can describe it, the attempts of a parrot, or of a magpie, to imitate the notes of the blackbird (*Merula vulgaris*). At the same time a cuckoo, in an adjacent hedge, kept up his monotonous chant—as if determined that even the unmusical missel-thrush should not want a choral accompaniment. We were more surprised, however, to see a sky-lark from about a hundred yards from our station, mount up amidst the war of the elements, and commence his sprightly strain, for the rain was pouring down in torrents, and the lightning flashing at intervals of a few minutes, while the thunder peals were both loud and almost incessant. The sky-lark, indeed, did not mount so high as if it had been unclouded sunshine, finding it, no doubt, somewhat uncomfortable to sing unsheltered in such a storm, while the missel-thrush and the cuckoo, probably, were protected by overhanging boughs.

THE ROCK-ROSE.—In dry, rocky, or calcareous places, in this month and the next, the rock-rose (*Cistus helianthemum*), is a very common flower, beautifying the patches of withered herbage with its golden blossoms, and giving an air of sunshine and gaiety to the barren rock. If you take a small probe or a hog's bristle, and irritate any of the numerous stamens of this flower, you will see them fall back from the pistil, and spread themselves upon the petals, exhibiting a very pretty example of vegetable irritability,—little less striking than that of the sensitive plant. A similar instance of the spontaneous approach and retreat of the stamens in another elegant British plant—the grass of Parnassus (*Parnassia palustris*), which is not uncom-

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mon in moist meadows and upland marshes. When the anthers are young, they stretch forward till they reach the summit of the pistil, where they deposit their fertilizing pollen, and then fall back towards the petals.

THE SOLAN GOOSE.—We find the following curious notice respecting the solan goose, in the very old translation of Boëtius:

"In the crag callit the Bas ar incredible noumer of soland geise, nocht unlik to thir fowles that Plineus callis see ernis. And ar sene in na part of Albion, bot in this crag and Ailsay. At thair first cumin (quhilk is in ye spring of the zeir) yai gadder sa gret noumer of treis and stikkis to big thair nestis, that ye samyn mycht be sufficient fewell to ye keparis of ye castell, Howbeit yai had na othir pronision. And yocht ye keparis tak fra thir fowlis yir stikkis and treis zit yai tak littil indignation thairof. Bot bringis haistelie agane als mony fra othir placis quhair thay fle."*

INFLUENCE OF SOIL ON ROOTS. "If a cucumber,"—says Sir James Smith in his Lectures, of which MS. notes are now before me—"is planted, and after the branches shoot, there is placed a stone in the way of either of them, the branch will turn off and avoid it, without *touching* the stone—but describing a circle around it. When it has passed the stone, however, it will go on in a straight line." Sir James explains this by the well-known law of plants always approaching the light, the cucumber turning round to get out of the shadow of the stone.

* Hector Boëthius, *Cosmographie of Albion*, translated by Bellenden.

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Roots follow a very different law—always endeavouring to get away from the light; and accordingly, so far from avoiding a stone or other obstacle, they often cling closely around it, and sometimes even mould their forms upon the hard substances with which they meet. This is well exemplified in the root of an alder tree (*Alnus glutinosa, Betula Alnis*, LINN.), which was embedded among the gravel formed by the Ravensbourne river at Lee; and it requires few details to point out how exactly it had moulded itself on every stone which it met with in its course.

In the same manner roots are much influenced in their forms by the soils in which they grow, of which the familiar instance of fibrous and bulbous roots, is a good illustration. When plants, with fibrous roots, are placed in certain situations, they are apt to change their fibrous structure for a bulbous one, in the same way as the leaves of the water crowfoot (*Ranunculus aquatilis*), has scalloped leaves above, and minutely winged leaves below water. The change from fibrous to bulbous roots, and the contrary, is markedly exemplified in some of the grasses, particularly in Timothy grass (*Phleum*), and Fox-tail grass (*Alopecurus*). Before this change of form was discovered, botanists frequently described the same grass under different names,—a circumstance which occurred with regard to *Alopecurus geniculatus* and *Phleum pratense*. Leers seems to have been the first to discover that transplanting into a light rich soil, tends to change the bulbous into the fibrous structure.

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AUGUST.

DROUGHT.—When dry weather, usual at this season, has continued long enough to evaporate the water of shallow ponds, the young geologist will find it interesting to examine the form of the cracks made in the sludge at the bottom, as illustrative of the forms of columnar rocks on the Wernerian principle. Colonel Imrie gives a very fine instance of this in which the current of a stream of water, had worn away the bank which had enclosed a pond. On the side thus broken down and laid open, the soil displayed a beautiful arrangement of columnar forms, about 18 feet in length, and from 1½ to 3 feet in diameter. They were all angular, consisting of four, five, and six sides. They were perfectly vertical, and the whole surface upon which the water had stood, was level and cracked into polygonal forms, upon which the Colonel stept along as upon a giant's causeway. Similar phenomena are not rare, though seldom to be seen under such favourable circumstances for examination.

TONGUE OF ANT-EATERS.—Last summer, we had brought to us a young wryneck *(Yunx torquilla,)* whose singular manner of feeding attracted our notice. Though it was so old as to be able to fly, it made no at-

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tempt to escape, and manifested no fear. We placed it in a cage, in which was the empty nest of a whitethroat *(Sylvia cinerea)*, and threw in a quantity of ants with their pupa, that it might fare abundantly. Those who are not acquainted with this bird, may be told, that it has a very long tongue, which it has the power of pushing out far beyond the point of its bill, an organ similar to that of woodpeckers, and the quadrupeds called ant-eaters, *(Myrmecophagæ,* LINN). It is said of the latter, that they station themselves near an ant-hill—extend their long tongue across a frequented track of the insects, who, crowding upon the tongue to examine what it may be, are suddenly drawn along with it into the animal's mouth, and devoured. At other times, it is said to plunge its tongue into an ant-hill, and drag up with it incredible numbers of the inhabitants. The accuracy of these accounts, we have no right to question, but it does not appear that the wryneck uses its extensile tongue in this way; at least, our young bird uniformly thrust its tongue between the grass stems of the whitethroat's nest, to route out the ants which had taken shelter there, and as soon as they were thus forced within its reach, it pecked them up in the usual way with its beak. It is probable, therefore, that actual observation may discover all the ant-eaters to proceed in the same manner, and that woodpeckers, which prey on insects feeding under the bark of trees, may only use their tongues to drive their prey within reach of their beaks, and not as is usually believed, for catching insects by means of its glutinous covering.

USE OF THE COROLLA IN FLOWERS.—It is, we believe, the prevalent notion of botanists, that the corolla,

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or coloured portion of a flower, is intended for the protection of the fructifying parts; but as the corolla itself is generally fragile and feeble, it is as Miss Kent shrewdly remarks, "like giving one infant to the care of another." This pleasing writer, however, does not seem to be altogether successful in explaining its use, when she says, "it were enough were it destined only to give pleasure; and, not to speak of the many chemical and medical uses, it frequently lodges fragrant oils, which, scattering volatile particles in the air, perfume the atmosphere around, and afford an additional pleasure to those who come to gaze upon its beauty." Theories like this always remind us of Pope's well known lines,

> While man affirms, all nature's for my use,
> "See man for mine!" exclaims a pamper'd goose.

We are much more inclined to believe St. Pierre's doctrine, of the corolla being intended as a mirror for concentrating and converging into the focus of the flower different coloured rays of light, which may be necessary as a stimulant to the different parts of fructification. As St. Pierre, however, is considered by scientific botanists, a fanciful writer, nobody, so far as we know, has tried any experiments to corroborate or refute the opinion; yet it appears, however, to be a point well worthy of minute investigation.

SALUBRITY INDICATED BY INSECTS.—About this season, flies usually begin to crowd into houses in some places in very troublesome numbers. Medically considered, swarms of house flies indicate unwholesome air, either from the vicinity of putrescent vegetable effluvia, or want of ventilation. They will accordingly be found most troublesome in the airless lanes, or narrow streets

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of cities, and no less so in the airy localities of cottages, or farm houses, when these are in the vicinity of stable-yards, dunghills, compost heaps, hot-beds, &c.

Gnats again, and other congeneric insects, indicate the neighbourhood of stagnant water, and marsh land,—a miasmatous locality liable to low fevers, ague, and rheumatism.

CHARACTERISTICS OF THE BEECH TREE.—The beauty of the beech seems to depend much upon the nature of the soil, and situation where it grows; and some might thence be disposed to question Mr. White's taste in calling it "the most lovely of all forest trees," (SELBORNE, Lett. 1)—a character which will not apply, for example, to the stiff clumpy beeches near Loughton, in Epping Forest, to the stunted rows planted beside the highway on the estate of Boswell of Auchenleck, in Scotland, nor to the more lofty, but naked trunks, which we observed marshalled like grenadiers along the public road-sides in some parts of Belgium. But we should be disposed to consider the fine group of beeches near Carmyle, on the banks of the Clyde, in Lanarkshire, not only lovely, but majestic, as well as those at Barskimming, the seat of Lord Glenlee, while those again in Mr. Heneage's park, at Compton House, Wilts, amply merit Virgil's epithet of the "spreading beech," though in no form of growth can the "pendulous boughs" of the beech be compared in gracefulness with the spray of the weeping birch, waving with every breath of air that sweeps by, such as we have seen in the romantic woods at Ulswater in Cumberland. We find an old German, as well as White, terming the beech "by far the most beautiful tree in the woods" (*in silvis*

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longe pulcherrima fagus).—EMBLEMA. vii. *ap. Aldrov. Dendrol.* p. 245, Mr. Loudon, also, who is among the best recent authorities, considers it "a handsome tree in every stage of its growth," and "one of the handsomest single trees for parks."

SLOUGHING OF PLANTS.—The power of sloughing has been denied to plants without good reason; for at a certain time of the year, the leaves of a plant decay, and fall off—so does ripe fruit. If a shrub when in leaf be planted, and any part of it die, the leaves formerly expanded will adhere to it, but those on the living branches will wither,—fall off,—and give place to others.—*MSS. Lectures of Sir J. E. Smith.*

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SEPTEMBER.

FRUITS.—Autumnal fruits are found to be more crude and indigestive than those of summer—the plumb, for example, in its infinite varieties, as well as apples and pears, (we mean in the raw state) than strawberries, gooseberries, or currants. One cause of the disagreement of the autumnal fruits with the stomach, and the greater digestibility of summer small fruit, may perhaps, be traced to the state of the *constitution.* At the commencement of summer, the system is more nerved and braced by the atmosphere of winter and spring, and by the drier food which necessity obliges us to take at those seasons; so that the cooling fruits of summer are wholesome, from their opening the bowels, and removing the oppression so commonly generated by the injurious habits of civilized life. But it is not wonderful that a continuance of a watery, and innutritious food like fruit, should, towards the autumn, produce debility in constitutions, partly predisposed to it by the continued and relaxing heats of the summer months.

NET-WORK CLOUDS.—During autumn, more particularly than at other seasons, we have observed the whole sky covered with what may with propriety be called a net-work of clouds, (*Cirro-cumulus*, HOWARD),

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as if little tufts of accumulated vapour had been carded through each other by opposite winds,—crossing and re-crossing them over one another, like the osiers interwoven into a transparent basket. The clouds again, which frequently bound this field of chequered vapour, are not spread out in tufts, but rolled up in enormous volumes, as white as snow on the edges, but darkening into ravines, and caverns, and overhanging precipices of endless forms, which are varied every instant by the influence of electricity, or of the predominant winds. When the clouds assume these picturesque forms, about sunset the aspect of the sky becomes very grand. The magnificent netting in the area of the firmament, transmits through its interstices a multitude of luminous rays —which tinge two sides of each tuft of vapour with ruddy orange, and the other two sides with shining gold, in tints which no pencil can imitate; and no language, describe.

RECIPROCAL EFFECTS OF BETRAYING FEAR.—It is well known that with regard to most animals, the betrayal of fear in one often excites another to mischevious attacks, or if these have been commenced, to increased boldness. That this does not hold, as is usually supposed, in the case of bees, appears from a circumstance which occurred to M. De Hofer, of Baden. Being a great admirer of bees, they appeared to have acquired a sense of friendship for him, by virtue of which he could at any time approach them with impunity, and even search for a queen, and taking hold of her gently, place her upon his hand. This was as usual ascribed to his want of fear; but having had the misfortune to be attacked by a violent fever, he soon found

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after his recovery that the bees considered him as a different person, and instead of being received by them as an old friend, he was treated as a trespasser; nor was he ever able, after this period, to perform any operation upon them, or approach within their precincts, without exciting their anger. It would thence appear, that it was not so much his want of fear and confidence in their want of enmity, as some peculiar effluvia of his body (changed by the fever) which gave rise to the circumstance. That the non-betrayal of fear, however, has a powerful influence upon quadrupeds, as well as upon man himself, there can be no doubt. We are acquainted with a gentleman, who affirms, that he is not afraid to face any animal, not excepting a lion, a tiger, or even a mad dog, and when in India, he gave actual proof of his courage, by killing with his own hand more tigers than one. His secret is to fix his eye firmly and undauntedly on the animal, a method which he maintains will cause the fiercest to quail. By the same means, he succeeded in subduing without other assistance a furious maniac, who had broke loose from confinement in a mad-house.

SEEDED PLANTS.—In the pastures may now be observed, patches and single stalks of grass, &c. in seed *untouched by cattle.* This seems a wise provision of nature for perfecting the seeds, and continuing the species, for were cattle to browse on the grasses, &c. while in flower, or in seed, as most of them are annuals, the succeeding crops would be much injured. We may illustrate the same fact, by referring to plants used for salads, which also are annuals, and as soon as they shoot into flower, and still more when they form seed, are not relished. We do not mean to assert generally indeed,

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that all plants are avoided by animals when in flower or seed, but when the remark is limited to annuals and biennials, it will hold almost universally. For even snails and slugs, those indiscriminate devourers, will not in this case touch a leaf.

FORM AND ASPECT OF MOUNTAINS.—Most of the principal mountains have one of their sides very steep, and the other gradually sloping. The Alps may be instanced as an example, having a much more abrupt descent on the side of Italy, than on that of Switzerland; the Pyrenees, again, are steeper towards the south than the north, while the chain of Asturias, which branches westward from the Pyrenees is just the reverse. Mount Taurus, in the part where it approaches the Mediterranean, and the Dardanelles, is abrupt on the south, but in Armenia, it has a rapid descent northward. The mountains of Scandinavia are steeper towards the west and north-west, than the east and south-east; and the Ghauts, in Hindostan, are in like manner precipitous on the west, and sloping in the opposite direction. In all these chains, the steepest side is found to be that which is nearest the sea, and consequently their inclination is most gradual towards the interior of the country in which they are situated.

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OCTOBER.

MIGRATION OF WILLOWS.—In the Life of Lord Kames, the following singular statement is given on the authority of Sir James Nasmith.—A number of willows had been frequently cut over at about eight or ten feet from the ground; their trunks, about fifteen inches in diameter, generally open on one side, and so much decayed that scarcely any thing remained but the bark and a small quantity of alburnum. These tops were furnished with fine shoots round their edges, which shoots had put out roots in great number, from the part where they were connected with the tree. These roots running down, some on the outside of the old trunk, and some on the hollow inside, until they reached the ground into which they penetrated, and until they had attained that point, made no attempt to put out lateral shoots or fibres. It is added, that the size of the roots by which this migration was performed, was generally about the thickness of a walking cane; and that, in their way down, they clung so closely to the old stem as to have impressed a groove in which they lay.*

* Appendix, No. 2, p. 40.

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It would be presumptuous in us to controvert, in a peremptory manner, a fact which we ourselves had not witnessed; yet we cannot help inferring that the alledged descending and migratory roots were nothing more than those cryptogamic plants *(Rhizomorphæ)*, whose resemblance to roots would deceive those not acquainted with them. We have found these very common near London, branching out most extensively under dead bark, and even through the whole substance of decayed elms and willows. It may be remarked, that nothing is said by Sir James of young scions springing from these alledged roots.

MOVEMENTS OF SHELL-FISH.—The fresh water muscles, which are common in rivers and canals, are not, as might be supposed, immoveably confined to the spot where they may chance to be produced, as any person may convince himself by placing a few of them in a vessel of water. In such circumstances they will soon be seen to approach or separate from one another. The organ with which they effect these movements is of a fleshy substance, about two-thirds of the length of the shell, and thrust out through the opening near its middle. This foot, as we may term it, is about half an inch broad in the larger shells, and sharp at the point. In order to move themselves from place to place, they thrust this organ under the shell, applying it with a quick motion to the bottom of the place where they lie, by which means they can not only change their place, but turn themselves upside down.

FLIGHT OF BIRDS.—Swallows, and some other birds of passage, begin to congregate previous to undertaking their distant migratory expeditions. Their capa-

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bility of performing flights much longer than there is any necessity for supposing, may be proved by numerous facts. Even a sparrow has been calculated to fly at the rate of not less than thirty miles per hour, and many experiments prove that the eider duck can fly ninety miles in the same time. The common kite *(Falco Milvus)*, has been observed to pass, without great exertion, over a space of a quarter of a league in a minute, and it could fly with ease from Cape Pruth to the Land's End in a single day. M. Audubon, the distinguished ornithologist, has shot the passenger pigeon of America, and on dissection, found its stomach full of fresh rice, which, to have resisted the digestive process, must have been swallowed *not many hours* preceding its death, but could not have been obtained within 800 miles of the place where it was killed. Though the nightingale, the willow-wren, and other birds of passage, fly with only half the swiftness, they may easily arrive in most parts of the south of Europe, or the north of Africa, in a few days.

MIGRATIONS OF THE CHAFFINCH.—As the summer birds of passage are now departed or departing, our winter visitants are beginning to flock in from the north. A very singular peculiarity in these migrations was first discovered by Linnæus in the chaffinch *(Fringilla Spiza*, RENNIE), of Sweden, the males migrating while the females remain stationary. It has been said that this occurs partially even in Britain with respect to the same bird. In the case of other migratory birds, it is remarkable that the males generally arrive first, preceding the females by several days, a circumstance

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which the bird-catchers know how to take advantage of.

The migrations of the different sexes appears to be by no means peculiar to the chaffinch; and hence, the epithet of widow or bachelor (*Cœlebs*), given to it by Linnæus, is inappropriate, more particularly as the bird is so remarkable for the neatness and beauty of its nest. It has therefore been deemed adviseable to substitute Aristotle's name of *Spiza*. Among other birds, whose sexes separate during winter, Selby mentions the snow-fleck (*Emberiza nivalis*), and there can be little doubt that it is chiefly, if not entirely, the cock redbreast which winters near our houses, the hens either retiring from the island or haunting more wild and solitary localities. In the case of most of our summer visitors again, such as the nightingale and the whitethroat, the cock birds always precede the hens in their arrival by one or two weeks.

THE FALL OF THE LEAF.—It is not enough to account for the fall of the leaf to say it falls because it is weakened or dead; for the mere death of a leaf is not sufficient to cause its fall, as when branches are struck by lightning, killed by a bleak wind, or die by any similar cause, the dead leaves adhere tenaciously to the dead branch. To produce the natural fall of the leaf the branch must continue to live, while its leaves die and are thrown off by the action of its sap vessels. The change of temperature, from hot to cold, seems to be one of the principal circumstances connected with the death and fall of the leaf. Hence it is, that European trees, growing in the southern hemisphere, cast

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their leaves at the approach of winter there, which is about the same period of the year that they put them forth in their own climate. The native trees of the tropics are all evergreens, and like our hollies and pines, have no general fall of the leaf, though there is always a partial fall going forward, and at the same time, a renewal of the loss.

MIDNIGHT MUSINGS.

BY MISS M. L. BEEVOR.

The world is asleep,—and I gaze from my bower
On its exquisite beauty, at this still hour,
For the cressets of Heaven, their tend'rest light
Pour down with a pitying smile on our night;
But their splendour is dimm'd by the hazy air
As envy veils all things most radiant and rare!

I gaze from my bower, on mountains that stand
Like shadowy portals to blithe fairy land;
But the soul o'erleapeth such bars at a bound,
And beauty, and music, and light are around
My wilder'd perceptions; yet, visions thus sweet,
Like the sun-rays of life, are beamings *too* fleet.

They're gone! and I gaze but on forest and sea,
Whilst others are waking this hour with me;
Song breathes from the lyrist of love and delight,—
The glow-worm's blue beacon is kindled to-night;
And the serpent and toad are now in their mirth,
For *venom* will mingle with sweetness on *earth*.

Cool breezes are wandering, rich with perfume,
Yet odours that seem from the flow'rs of the tomb;
'Tis sung, that there's poison in night's gelid breath,
Whilst wooing *her* beauty, is but courting death.
Alas! since the holiest bliss that may be
Is as deadly as scent of the Upas tree!

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NOVEMBER.

GLOOMY WEATHER.—To prevent the gloom and melancholy proverbial to this month, the best thing is to defend the skin from chill and damp by proper clothing, and to seize every favourable glimpse of sunshine and dry weather to be out of doors. The power of electricity over the body is well known; in fact, we can never enjoy health nor comfort without a proper portion of it in the system. When this portion is deficient, we feel languid, heavy, and low spirited, and we very foolishly pronounce a libel on the blood which is quite innocent, while we never suspect the damp atmosphere for robbing us of our electricity. Yet so it is. In dry weather, whether it be warm, cold, or frosty, we feel light and spirited; because dry air is a slow conductor of electricity, and leaves us to enjoy its luxuries. In moist or rainy weather, we feel oppressed and drowsy; because all moisture greedily absorbs our electricity, which is the buoyant cordial of the body. To remedy this inconvenience, we have only to discover a good non-conductor of electrity to prevent its escape from the body, and this we have in silk, which is so excellent a non-conductor, that the thunder-bolt, or the forked lightning itself, could not pass through the thinnest silk handkerchief,

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provided always that it be quite dry. Those, therefore, who are apt to become low-spirited and listless in damp weather, will find silk waistcoats, drawers, and stockings, the most powerful of all cordials.

ALLEGED MIGRATIONS OF THE HERRING.—According to Duhamel,* the herring shoals move in regular order, according to the seasons, issuing in spring from the polar seas in two great divisions, the western shoal reaching Iceland in March, while the eastern streams, down upon the coasts of Norway, filling the Baltic sea, and passing on to Shetland, the Orkneys, and Scotland, —onwards as far as the Downs on the one side, and Wales on the other. These two British shoals meet towards the beginning of the present month at the mouth of the Channel, and, according to Mr. Gilpin,† cross the Atlantic to America, where they deposit their spawn till April. When the warm weather sets in there, they seek a cooler temperature farther north. M. Bloc, on the other hand, with much plausibility thinks, that none of these distant migrations ever occur, the whole phenomena being referable, as he thinks, from the shores where they come to spawn, to the adjacent deep sea, in which they permanently live. If this be as correct as it appears plausible, it must be a prodigal waste of time and capital to send vessels to what is denominated the deep sea herring fishery in high northern latitudes, for they may, in all probability, be met with in equal plenty in the deep seas off our own coasts—near Yarmouth, Loch Fine, and other celebrated herring stations.

* *Traité Gener. des Peches*, ii. 342—3.
† *Trans. Amer. Phil. Society*, ii. 236.

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WINTER OATS.—Among other modes of artificial culture, experiments have been made with oats sown in the autumn, to stand the winter in the manner practised with regard to wheat. If our information be correct, the plan has been successful, in so far as early and abundant crops can be deemed so; but like the well known variety called the potatoe oats, the winter crop is supposed to be more liable to shake when ripe, than what is sown in spring. We have remarked, that it is the natural habit of many, if not all, the annual native grasses to spring up into their first or second leaf in autumn, and to await the returning summer to evolve their seed stems; so that the winter wheat, and winter oats, seem to be more according to nature, than sowings in spring.

Like the seeds of plants just mentioned, the eggs of many species of insects, are deposited in the autumn;—survive the winter; and are hatched in spring—the living principle, though not in a state of activity—being capable, as it would appear, of withstanding severe cold. As an example of this, we may mention the eggs of the lacquey moth *(Lasiocampa Neustria)*, which are laid in a sort of spiral round the twig of a tree, and fastened with a strong cement. The chrysales, or pupæ, of various sorts of moths and butterflies, also remain through the winter, but are usually shielded by a web or crust, some above, and some under ground.

THE IVY NOT INJURIOUS TO TREES.—The ivy now begins to substitute its dark green leaves for the lighter colours of the diciduous trees which it climbs upon. It appears to be a vulgar prejudice, that ivy kills the trees it clings to. If it rooted itself, as is erroneously

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supposed, in their bark, and fed on their juices, it might merit the accusation of a destroyer, but it derives its nourishment wholly from the ground, where it is rooted, and the supposed roots on the bark of trees are only tendrils or hold-fasts, to enable it to climb. The opinion of its injuring trees, seems to have arisen (and very naturally too) from the fact, that it prefers to climb up a dead or dying branch, and will not attach itself to very young wood at all.

CORNUA AMMONIS.—These singular fossil shells are now termed *Ammonites*, and consist of a number of chambers, divided by spiral partitions, which are pierced at the outer-side by a communicating tube (*Siphunculus*). It is highly probable that this apparatus enabled the animal to raise or sink itself in the water; for there seems to have been no communication kept up between the animal and the chambers, after it had once left them, except for the passage of the *siphunculus*, the increased mass of the shell, would counteract the increasing weight of the animal, and by contracting or dilating the *siphunculus*, it might rise or sink at pleasure.

The monkish legends bear that these shells are serpents which have been petrified by the prayers of saints; in Scotland they are called *witch stones*. I was highly amused with the Swiss tradition of their formation, given by Saussure, (*Voyages dans les Alpes*, S. 465), ascribing them to the fairies, who, (it is alleged), having been once the sovereigns of Switzerland, retired occasionally to the Cavern of Balm, where these fossils are found, and amused themselves with sculpturing the rock into whimsical and fantastic shapes. Specimens are mentioned as large as the fore-wheel of a chariot, and weighing 1000 lbs. but the shell, when recent,

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appears to have been thin and light, like the nautilus family *(Nautulidæ)*.

ROCK-BLOCKS.—M. Hausmann, whose profound knowledge of geology is well known, has published an excellent memoir in Latin, under the title of "De Origine Saxorum per Germaniæ septentrionalis regiones arenosas dispersorum." He describes the dispersion and gradual wearing down of the innumerable erratic blocks, found in the sandy plains of Northern Germany; though as M. Brogniart justly remarks, they are by no means confined to this district, but extend east and west, as well as along the course of the Danube.

All their phenomena indicate a violent catastrophe, which the northern portion of the globe must have sustained at the period of its last general change. M. Hausmann mentions the several theories devised to account for these. Some geologists are of opinion, that the blocks in question have been formed in the localities which they now occupy, being the remains of mountains which anciently occupied those plains. This opinion has been defended by Beroldingen, and lately revived by Muncke, but though at first sight it appears simple, it is disproved by the great diversity of the species of rocks found indiscriminately together, though varying very far in the dates of their formation. Some, for example, are enveloped in sand, in clay, and in marble, whilst others, entirely naked and isolated, rest upon a posterior alluvium. The blocks, moreover, are not surrounded with stones in such a manner as to support this opinion, and their smooth surface, whether it be plain or rounded proves, that they must have long been exposed to the influence of water. Other geologists suppose them to have been thrown out from volcanoes, or

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to have fallen from the firmament,—opinions which it requires little expense of argument to disprove. The prevailing hypothesis is, that the rock blocks have been detached from mountains more or less distant from their present position,—some referring to the mountains in a northerly, and others to the mountains in a southerly, direction. M. Hausmann himself, is of opinion, that the rock-blocks in question have been rolled in a direction from north-east to south-west, and supports the theory by referring to Brunswick, Hanover, the valley of the Weser, &c. where are found the porphyry of Elfdal, and other stones which abound in Dalecarlia, as well as in the neighbouring mountain chains. In Mecklinburg also, and Pomerania, are found the debris of the rocks of Yottland and Oeland; and the dispersion of these blocks extends even through Denmark, and into the interior of Sweden, as has been more fully explained by M. Brogniart.—*(Bulletin des Science).*

THE WINDS!

The winds! the winds are shouting loud,
Mysteriously they pour
Their songs of triumph to the cloud,
Their wild dirge on the shore—
They hurry on—they hurry on,
Invisible and lone,
O mighty and tremendous One!
O storm-king! where's thy throne?

Shrouded on Chimborazzo's height,
Mantled with clouds obscure,
Sittest thou on thy rock of might
Stern, fearless, and secure?

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Lord of the thunder! dost thou hurl
Its awful vengeance forth,
Making thy livid lightnings curl
Around the quailing earth?

I've heard thee in the dead of night
Reign conqueror of the gloom,
And in thy car of phantom light,
Wail o'er the dead day's tomb!
I've seen thee sweep the stars aside
Like glow-worms from thy path,
With all a tyrant's dismal pride
Insatiable of wrath!

I've heard thee o'er the distant hill
When earth was one sweet smile,
And the sun delightedly stood still
To gaze on it the while.
When every river turned to gold,
And every grove and bower
Seemed in his radiance to be rolled
In that transcendant hour.

And whilst I've heard thee I have thought
Of Paradisal hours,
And how the tempter ruin wrought
Amidst the vales and flowers.
And whilst I've thought, I've heard thee rise,
Bringing thy thunders forth,
Dimming the glories of the skies,
The beauties of the earth!

Whence art thou, thing of viewless sound,
Omnipotent in pride,
Sweeping across Creation's bound,
With pale death by thy side?
Whence art thou wheeling thro' all space
With thy outstretching wing,
And clasping in thy cold embrace
Earth and each living thing?

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I own in summer's bashful eves,
When o'er the dreamy vales,
The silver dew its mantle weaves,
And incense fills the gales.
When every river rolls along,
And every fountain flings
Its low, still, eloquence of song
Upon the breeze's wings.

I own thy zephyrs are as sweet
As any infant's sigh,
Or lips of lovers when they meet,
With no intruder nigh.
Thy zephyrs! that have rifled all
The bright vales and the flowers;
O they're so sweet, they ev'n recall
The breath of Paphian bowers!

But fickle as a woman's heart,
And false as is her tongue,
Whatever hopes thy sighs impart,
They linger—last not long—
But terrible as is despair
To him who feareth death,
Thou spring'st from out thy lion-lair,
And thunder'st on our path.

Voice of the Heaven of Heavens on high,
Voice of the wond'rous One!
Who spread the soft cerulean sky
Beneath his viewless throne—
Voice of his anger! when thou leap'st
From mighty mount and hill;
Voice of his kindness! when thou keep'st
Thy solemn dirges still!

Eternal anthem! whence thou art,
Or where thou goest to,
Severing the sultry clouds apart,
Or breathing balmy dew—

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Whether thou fill'st pale sorrow's breath,
Or waftest hope's bright wing,
Thou'rt like the bird that knows no rest,
From spring to sunny spring!

Lord of illimitable space,
Unconquered—unsubdued,
Spirit! that hath no dwelling place,
Sovereign of solitude!
A dreadful hour is hast'ning on
Breathless—yet full of breath;
When thou wilt sound with mighty tone
The trump of life and death!

And then thou diest! thou soundest then
Thine own knell to the world,
Which will not hear thy voice again
With direful fury hurled.
For time and space, and earth and all,
Which thy wing sweepeth o'er,
Will, at that trumpet's awful call,
Dissolve, and be no more!

Voice of a thousand storms! to thee
I strike my trembling lyre;
Thou sweepest thro' immensity,
In many a tempest dire.
But when the world, ev'n as a scroll,
Is withered by God's ire,
Where will thy living thunders roll,
Where will thy wrath expire?

No more—Man's powers may not avail
To tell thy bitter fate,
Thou'lt be an old forgotten tale,
A ruin out of date;
But who will live, that tale to tell,
When every lip is cold.
Earth's records have not left a spell,
And I am not so bold. H. C. DEAKIN.

Abbey Cottage, near Leek, Staffordshire.

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DECEMBER.

MIGRATION OF BIRDS TO THE MOON.—In a scarce anonymous tract, published by Crouch in 1703, written to expound the text—"The stork in the heaven knoweth her appointed times, and the turtle, and the crane, and the swallow, observe the time of their coming,"* it is maintained with no little ingenuity, that our migratory birds retire to the moon. The arguments are much too long to be mentioned here, but we think our readers may be amused with the "Postscript" of the author, who is designated on the title page—"A person of learning and Piety."

"Concerning," he says, "the great distance between the moon and the earth, if any one shall still remain unsatisfied, I have only this to offer to his consideration, whether there may not be some concrete bodies at much less distance than the moon, which may be the recess of these creatures, and may serve for little else but their entertainment. Thus, we see many rocky islands in the sea, that are of no other manifest use, than for sea-fowls to rest and breed upon, and these are, therefore, commonly called gull-rocks. Now, if there be such globuli or aetherial islands, they must be supposed of such magnitude only, and set off at such distance, as their

* Jeremiah, viii. 7.

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reflexive light may not reach home to our earth, (though perhaps they may serve to illuminate our atmosphere) else they would e're now have been discovered, and yet no farther off, than these birds may conveniently arrive unto them in such time as may be most convenient to allow them. This I do suggest, because it is hard for me to persuade myself, that they come from any other part of this earth, as it is to persuade another, that they come from the moon; and, therefore, if the moon will not be allowed, some other place must be found out for them."

It must be confessed, that however fanciful this may appear, it is more rational and plausible than the opinion maintained by many distinguished naturalists, that swallows hybernate at the bottom of lakes and rivers, among the mud.

EVERGREENS. — The Strawberry-tree (*Arbutus unedo*), one of our prettiest evergreens, now shows both fruit and blossoms, at the same time, in situations favourable to its growth; for it does not blow freely in every exposure. In the neighbourhood of London, for example, it seldom fruits well, while in Ireland, of which indeed, it is partially a native, it may frequently be seen loaded with its crimson berries, and beautifully lucid flowers. Evergreens, it may be remarked, at least those in cold latitudes, are furnished with strong, tenacious, viscid juices, which are usually most abundant also (in firs for example) at the base of the leaves, and this serves to protect them from the effects of cold and damp. Within the tropics, these glutinous juices are less required, though there all trees are evergreen, and as evergreens are usually darker in tint than deciduous plants, the tropical forests never exhibit the endless variety of

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shades which are so much admired in temperate climates.

TORPIDITY OF SWIFTS, AND SUBMERSION OF SWALLOWS.—The experiments of Spallanzani and Reeve, render it very improbable that any species of bird should become torpid. The rapidity of the circulation of the blood in birds, is a circumstance which strongly opposes the supposition of torpidity occuring amongst them—a slow circulation being one of the most indispensable conditions.

Few naturalists of any note, we suppose, now believe in the submersion of swallows under water during the winter, a circumstance not long ago believed in by Naturalists of the highest name, such as Daines Barrington, Klein, and even Linnæus himself, who talked of their assembling on reeds, and on the banks of rivers, and singing their swallow song before they dived. But were this so, our fishermen could not fail to drag some of them from their hiding places with their nets, a thing which has never been known to happen. Independent of this, their physiological structure renders it impossible for them to exist for many months under water; and it is contrary to all analogy in the class of birds—for not even the sea-fowl, which live constantly in the water, are able to remain any time submerged. To put an end at once to the controversy, our European swallows have been repeatedly seen crossing the Mediterranean towards Africa, at their autumnal departure, and M. Adauson, who was too good a naturalist to be easily deceived, found them during winter in Senegal.

NATURE OF BITUMINIZED FOSSIL WOOD.—The most recent investigations of our best chemists and geolo-

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gists, tend to confirm what is here said, in opposition to the universal popular opiniou. Dr. Watson proved, that even the lightest wood will sink when floated in water, till it is thoroughly saturated with moisture. When trees, therefore, fall in the water of bogs they soon become thus saturated, when the chemical process of bituminization commences, by which the original colour of the vegetable matter is converted into a deep brown. Sometimes the texture is changed, as in the process of putrefaction, the substance called *peat* being the result; but in the case of trees, the original fibre of the wood is most frequently preserved, at the same time the whole is imbued with the bituminous matter, and this being always very inflammable, similar to pine and fir-wood, it has given rise to the opinion that it is actually fir. There can be no doubt, that fir may be found under these circumstances in countries where pine-forests grow; but in Derbyshire, Cheshire, and Walmer Forest, the existence of fir in the recent bog-formations, must be very problematical. The subject, however, still requires more minute investigation than it has hitherto received.

PRESERVATION OF TREES IN WINTER.—In iron-founderies, such as the foundry for cannon at Munich, it is customary to stir the melted metal with a branch of green oak, and notwithstanding the great heat of the metal, the green wood is not affected deeper than about the twentieth part of an inch. This striking fact is explained from the non-conducting power of the sap, and upon the same principle it is that the bodies and branches of trees, not having the covering of snow which the roots have, are protected from the operation of cold,

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by their sap increasing in spissitude, and of course in non-conducting capacity, as the winter approaches. On similar principles, we may account for the preservation of various kinds of fruit.

RULES FOR THE WEATHER.—A wet summer is always followed by a frosty winter, but it happens occasionally that the cold extends no farther. Two remarkable instances of this occurred in 1807—8, and 1813—14. With these exceptions, every frosty winter has been followed by a cold summer.

The true cause of cold, or rather the direct cause, is to be found in the winter excess of west-wind—every winter, with excess of west-wind, being followed by a cold summer; and if there is no cold before or during a first excess, then a second excess of west-wind in winter occasions a still colder summer than the first. It also appears by repeated experience, that cold does not extend to more than two years at a time.

Again, if the winter excess of east-wind be great in the first instance, the winter will be mild, and followed by mild summers; while the summer excess of east-wind is itself in the first instance always mild, but uniformly followed by cold winters and cold summers, which continues more or less for one or two years, according to circumstances.—*Mackenzie,—Syst. of the Weather.*

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